

**MODIFICATION OF THE PGM  
(General Municipal Plan)  
FOR THE RENOVATION OF THE  
INDUSTRIAL AREAS OF POBLENOU**

**22@BCN ACTIVITY DISTRICT**

**Amalgamated text**

**LEGAL NOTICE**

The definitive legal text regarding the Modification of the General Plan corresponds to the original text in Catalan. This translation is the result of the intention of Barcelona City Council to divulge the contents of the proposed modification. This document is intended to provide information only , and does not constitute a legal document.

Barcelona, September 2000

**Management:**

Josep Antoni Acebillo, Chief Architect of Barcelona City Council  
Ramon Garcia-Bragado, Urban Planning Manager

The following team from the Urban Planning Department has been responsible for writing this report:

Ricard Fayos, architect, Technical Urban Planning Director  
Rafael González-Tormo, Economist, Director of Co-ordination and Resources  
Enric Lambies, Lawyer, Director of Urban Planning Procedures  
Aurea Gallén, Architect, Head of the Planning and Development departments  
Joaquim Clusa, Economist, Regional Barcelona  
Aurora López, Architect  
Pau Batlle, Architect  
Sònia Cobos, Lawyer

The following have also contributed to the elaboration of this document:

Joan Solà, Architecture Student  
Rosa Torras, Architecture Student  
Lidia Falgueras, Administrative Assistant  
Mariola Rosado, Administrative Assistant  
Montserrat Triguero, Administrative Assistant

The following have co-operated with various contributions:

Joan Trullén, Economist, City Council Commissioner of Evaluation, Economic and Territorial Diagnosis for the Barcelona "City of Knowledge" project  
Guillem Sánchez, Economist, Joint Municipal Management Director  
Ma. Antònia Monés, Economist, Director of the Technical Programming Office  
Miquel Barceló, Director of the Catalan Institute of Technology  
Joaquim Español, Architect, Director of Projects and Planning  
Antoni Sorolla, Architect, Director of Urban Planning Actions  
Montse Mendoza, Architect, Head of Building Department  
Joan Moya, Industrial Engineer, Head of Activity Licence Department  
José Luís Pérez, Lawyer

The work carried out by the following has also been considered:

Poble Nou Workshop February, June 98 - UPC (Universitat Politècnica de Catalunya)  
Industrial Engineering College, on the production activities of Poblenou  
Catalan Institute of Technology, "Digital City Study"

## INDEX

---

### REPORT

- Chap. 1. Introduction
- Chap. 2. The new 22@ zone
- Chap. 3. Urban renovation of the Poblenou industrial district
- Chap. 4. Regulation of the residential facades in 22@ zones
- Chap. 5. Regulation of new activities
- Chap. 6. Intervention
- Chap. 7. Infrastructure provision (Infrastructure Plan)
- Chap. 8. Amenities
- Chap. 9. Management
- Chap. 10. Comparative table of land classification for the PGM and its Modification.

### URBAN REGULATIONS

- Chap. 1. General considerations
- Chap. 2. Regulation of 22@ activities zone
- Chap. 3. System regulation
- Chap. 4. Development of the MPGM
- Chap. 5. Plan execution

Additional considerations

Appendix 1: List of @ activities

Appendix 2: Industrial buildings reusable for housing

### ECONOMIC AND FINANCIAL STUDY

1. Justification, contents and objectives of the economic and financial study of the modification of the PGM.
2. Ceiling and Floor dimensions resulting from an urban planning bylaw and stages plan.
3. Request for activity ceiling in Barcelona and Poblenou.
4. Economic viability report of urban planning charges.
5. An estimation of real estate feasibility of the proposals (Special Plans).

### ACTION PLAN

### GRAPHIC DOCUMENTATION

Appendix: Urban processes of TIC implementation. Digital City Study. Catalan Institute of Technology.

## **REPORT**

---

**THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF  
THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

**AMALGAMATED TEXT**

## Chapter 1

### INTRODUCTION

The modification of the General Metropolitan Plan (MPGM) has as its scope the Industrial land of Poble Nou and as its main objective its transformation into a new 22@BCN Activities District, dedicated to new economy activities, in which activities related to information and communication technology play a main role. This objective will be fulfilled favouring diversity of uses, respecting and increasing the use of housing and redeveloping this land.

#### **Creation of the MPGM. Criteria Phase, objectives and general planning solutions**

The MPGM has had a very complex drawing up process with ample public participation. The Decree of the 9th of June 1998 resolved to display publicly, for a period of thirty days, the document: “*Objectives and general planning solutions for the renovation of the industrial areas of Poble Nou*” (BOP No. 152, on the 26th of June 1998, *La Vanguardia* newspaper, on the 19th of June 1998, and on the decree noticeboard from the 3rd of July to the 25th of August 1998) in accordance with article 56 of the legislative decree 1/1990 of the 12th of July. This Decree modified the urban planning legal texts in force in Catalonia (hereafter DL 1/1990), 125 of the Urban Planning Regulations and article 3 of the Decree 146/1984, of the 10th of April, which approved the regulation for the deployment and application of the Law 3/1984, on the 9th of January, with measures to adapt to the Urban Planning bylaws of Catalonia.

Subsequently, the decree of the 7th of July 1998 extended the period of public display (BOP NR. 173 of the 21st of July 1998, *La Vanguardia*, 15th of July 1998, and on the decree noticeboard from the 28th of July to the 30th of September 1998).

26 proposals were presented during the period of public consultation. On the 3rd of March 1999 the Planning Services Department issued a report approving the criteria document. By the decree of the 25th of March 1999 the Mayor approved the Criteria Document.

Given the complexity of the matter in hand, the planning process which ends with the current MPGM has entailed several advisory and work sessions with institutions, with professionals from the industrial and economic sector, and with ICT (Information and Communication Technology) and cultural experts. The objective of these sessions was to accurately profile the future vocation of this sector of Poble Nou and of regulating the central theme of the modification: namely, the activity subzone key of 22@. It has also permitted, jointly with the Planning Services work, the inclusion of contributions from urban planners and architects in the pre-drafting of the more technical aspects of the proposal. Some of this work is included as an appendix.

#### **Procedures**

The process of modification of the PGM had to be adjusted to the provisions of art. 75.1 of the DL 1/1990, as the MPGM had to be subject to the same dispositions formulated for its creation.

Its processing follows the procedure provided in articles 57 to 59 of the DL 1/1990, of the 12th of July and articles 11,12 and 66 of the Charter of Barcelona. The basic precedents of these articles are: initial approval, public display for a period of one month, provisional and permanent approval.

The green and public spaces included in the current plan remain unmodified. Subsequently, it is not necessary to follow the special procedures provided for in article 66.5 of the Charter of Barcelona.

The City Council Plenary Committee initially approved the MPM on the 22nd of December 1999 and provisionally by agreement on the 28th of April 2000. The Urban Planning Subcommission of Barcelona City Council definitively approved it by agreement on the 27th of July 2000 with prescriptions incorporated by the appropriate legal body and included in the current modified Text.

### **Basic determinations**

The modification of the PGM for the renovation of the industrial land of Poble Nou, in order to fulfil its basic transformation objective, is based on the following determinations:

- A) The creation of activity subzone 22@ within the existing 22a industrial zone. Inside this area, the maintenance of existing housing is allowed, as well as ensuring the existence of new buildings destined for protected housing.
- B) The definition of activities that, within the 22@ subzone, are considered characteristic of the sector and necessitate special urban planning requirements: @ activities.
- C) The definition of specific types of public amenities, related to @ activities and the specification of the lands allocated to this classification.
- D) The reurbanisation of the industrial land of Poble Nou in order to provide it with the adequate infrastructure for companies and @ activities.
- E) The provision of planning and development instruments as operative tools for intervention (Special Internal Reform Plans or PERI) and the definition of their fundamental conditions of exploitation as well as the urban planning overheads, have as their objective the motivation of community participation in the added value created by the planning and, additionally, the fair distribution of benefits and expenditure.

### **Justification of the planning model**

The fulfilment of the proposed objectives implies the obligation to modify the PGM. Specifically, it is necessary to modify the PGM for the following reasons:

- A) To define new standards for the reurbanisation of the sector.
- B) To regulate the uses and degree of building allowed by the 22@ subzone formula.
- C) Regulation of 7@ amenities.
- D) The determinations for the development of special plans.

The modification of the PGM is compatible with provisions of the PGM Urban Planning Regulations regarding successive modifications of this plan according to article 4.2. It does not alter the overall coherence of the PGM determinations regarding the territorial model nor has a bearing on the supposed decision to revise articles 3.1 and 4.1 of the N.U., according to the provisions of article 73 in relation with 23.1 e, of D.L. 1/90.

## Development

The complexity of the transformation entails the definition of a flexible derived planning system that allows both the operations the City Council intends to promote directly as well as other intervention not yet defined, arising from the same objectives and contents, and with the possibilities for development via private initiative.

This plan is a gradual, large-scale internal reform operation, directly oriented towards the transformation of the sector that includes both integrated and individual operations for successive development. To this plan must be added the need to allow the continuation of development outside the specified scope of transformation, the industrial uses currently allowed, with the necessary conditions to ensure that they do not have a negative effect on with the new proposed environment.

Likewise, it is intended to accommodate the existing dwellings, resulting from historical urban planning processes, within the proposed transformation procedures and to define the reform and improvement of the building height criteria where they are located. New housing development will be catered for by a) Reusing existing industrial buildings of specific characteristics and b) public protected housing.

These provisions obey urban planning considerations that offer compatibility with the various regulatory instruments: favouring diversity of uses and architectural typologies.

The MPGM offers different derived planning instruments for its development. It includes Special Plans: a) Interior reform; b) integral (art. 66 of the Charter of Barcelona); c) development of equipment systems and free spaces; d) infrastructure and subsoil.

In particular, the urban planning Regulations include the following procedures:

- a) Special Internal Reform plans, defined in the MPGM (integrated interior reform operations of article 23.2.1 of DL 1/90).
- b) Special Interior Reform plans of intentionally non-specific nature, intended to develop transformation procedures in strictly defined situations (planned integrated internal reforms stipulated within their own confines).
- c) Special Plans regarding building height defined in map 3 (Special Internal Reform plans, also of defined scope).
- d) Integral Special Internal Reform Plans to implement the isolated transformation of industrial buildings (transformations that due to their consolidation, may be excluded from the general intervention). Intervention in existing consolidated buildings, which when their new uses are covered by the MPGM will incur their corresponding levies, including those of concession. These are included as isolated internal reform intervention, as they must contribute with the provision of systems for the compliance with the corresponding standards, together with a high level of architectural definition (67.3 of the Charter of Barcelona).
- e) Integrated Special Plans of industrial buildings destined for housing. Also include the concession of land destined to comply with the corresponding urban standards.
- f) Special Plans for the development of new hotel establishments and @ activities on specific sites of a predetermined size (minimum plot 2,000 m<sup>2</sup>), not included in intervention. Their formulation is admitted on specific conditions, as overall

improvements to the proposed development of the block, but without the benefits implicit in the overall intervention.

- g) The amenities will be developed by a Special Plan according to articles 215 and 217 of the NU (*Normes Urbanístiques* - Urban Planning Regulations). The Special Facility plans do not predict further new actions apart from the ones related to the new 7@ type and its planned uses.
- h) The definition of the relevant infrastructures and urban services requires the formulation of a Special Infrastructure plan that will also regulate the control of subsoil. The Special Infrastructure Plan is covered in article 29 of DL 1/90 and art. 76 of the Planning Regulations. The Charter of Barcelona, in article 65, defines the provisions that the General Plan must include in relation to different infrastructures.
- i) There is the possibility of a Special Plan for the appropriate definition and systemisation of the elements that go to make up the local systems of free spaces and green areas.

### **Transformation operations: reurbanisation and new applications**

1. The MPGM is planned as a large interior reform operation covering the industrial land of Poble Nou.

Given its characteristics, this operation must be developed in a progressive way, adapting it to the already existing situation, in order avoid producing a dramatic impact on current uses. For this reason, predetermined areas of transformation have been laid out, within which Barcelona City Council assumes the planning initiative. Development will be carried out by using PERIs (Special Internal Reform Plans), which will define the necessary action units for management and the ideal action systems. In addition, the general rules for the definition of new internal reform planning areas and the new transformation areas have been defined. The definition of the scope for these actions is based on the Eixample block (The built element of the gridiron neighbourhood of Barcelona designed by Ldefons Cerdà in the late 19 thC).

2. The legal guidelines have also been specified for the land where transformation areas have not yet been defined. This is intended to ensure continuity - for new construction, intervention in existing buildings and the uses and activities to be implemented - with regulations similar to the those currently in force, but with the necessary adaptations to ensure its compliance with the modern activities district established by the new MPGM.
3. The MPGM determines the need for the reurbanisation of the sector, including the building of a series of new urban elements, considering the obsolete and insufficient state of the existing ones.

It is, in any case, the duty of the MPGM to define the conditions of land development in accordance with article 65.2 e), g) and h) of the Charter of Barcelona, to the effect of that laid down by article 119 of DL 1/90. The economic effect of this development is detailed in the economic and financial study of this Plan.

4. The regulation of intervention significantly increases the exploitation of the area, both in terms of a more profitable land use than current classic industrial uses, and in terms of the modification of building constraints. The building index for the 22a



area of 2m<sup>2</sup> roof/m<sup>2</sup> increases to 3m<sup>2</sup>roof/m<sup>2</sup> in the new transformation areas. Action in these areas is the general rule as far as exploitation is concerned, given that it can be accommodated within the overall intention. Within this general index of 3m<sup>2</sup>roof/m<sup>2</sup> it is planned that the buildings resulting from the 0.3m<sup>2</sup>roof/m<sup>2</sup> index destined for public protected housing be of public municipal ownership.

Within the ambit of the transformation defined in the MPGM, in which integrated wide-ranging actions are planned, the 0,3m<sup>2</sup>roof/m<sup>2</sup> public ownership index is increased to 0.5 m<sup>2</sup>roof/m<sup>2</sup>s in order to meet the demands for specific technical service infrastructure, parking space for the sector and, if required, public protected housing.

In order to allow for the development of buildings for industrial use – adjusted according to permitted compatibility conditions - and to develop actions in large plots for transformation-driven uses (hotels, @ activities), development is permitted in accordance with the 2.2 m<sup>2</sup>roof/m<sup>2</sup>s index. If feasible, intervention would be added in the future in order to take advantage of land not yet exploited and its corresponding urban charges.

The building index established by the PGM for the 22a industrial area (2m<sup>2</sup>roof/m<sup>2</sup>s) is complemented by the 0.2 m<sup>2</sup>roof/m<sup>2</sup>s index in new actions that may be developed through a direct licence and permitted by a Special Plan. This index is set as compensation for the increase in development costs related to the Special Infrastructure Plan. In any case, it is more appropriate for architectural typologies entailed in new uses and activities.

Concessions are bound to intervention, in which all the exploitation potential allowed by the MPGM can be developed. Should this be the case, actions carried out in accordance with the 2.2 m<sup>2</sup>roof/m<sup>2</sup>s index may include the remaining exploitation of any intervention, together with corresponding levies.

5. Finally, it is assumed that redevelopment, use and building modification will result in a significant increase in exploitation. In this sense, the planning of exploitation concessions must be carried out with relevant care, at all times according to current Catalan legislation regarding urbandevelopment, and in accordance with the Law 6/1998 of the 13<sup>th</sup> of April.

Concessions of green areas and public amenities are without doubt the result of internal reform action planning, with the aim and effect of ensuring the necessary standards.

In all cases, these concessions must clarify that they are remunerated by the corresponding exploitation, as specified in the MPGM.

## Relation with current planning

1. The scope of the MPGM includes land mostly classified as a key 22 industrial zone by the PGM. With reference to communication systems (streets), free areas and amenities, the MPGM does not introduce any modification that affects the general and organic land structure (art. 23 of DL 1/90 and 25 of Urban Planning Regulations). It only proposes the conversion of Llacuna street into a vertebral axis of the area, subordinated to the specifications of the development planning proposal (PERI). The incorporation of land in the planning area of Diagonal-Poble Nou is regulated by additional regulations.
2. Additionally, the regulation of subzone 22@ does not modify the sector's overall uses, so the industrial vocation of this area is maintained, but adapted to the requirements of modernisation and new technologies, taking into consideration that it is not a conventional industrial area at all, given its central urban location. The regulation of the subzone advances via the updating of industrial regulation of the PGM-76, already covered by the MPGM of 1988, with the new drafting of article 351.2 regarding the admittance of office use in certain circumstances.
3. One of the main objectives of the regulation of subzone 22@ is to give an ideal treatment to the already existing dwellings, which in the majority of cases predate the industries installed there, and which are a product of historical urban development processes. This recognition and the feasibility of their maintenance and renovation satisfy the demands of the residents of the area and clarify the situation of the approximately 4,614 existing dwellings. With this specific regulation, the non-compliance rule (art. 93 DL 1/90), originally established to include the residences in the regulation as a permitted use, is put to one side.

After a thorough inspection, the regulation recognises the existing building façades and grants them special regulatory conditions. The increase of constructed volume and the new building work on these façades are bound by the elaboration of a Special Plan detailing the conditions for building and use.

4. New housing planned under the 22@ zone key, not including built façades, is affected by special conditions: it must be designed according to public housing standards. It has been decided that the exploitation derived from the application of the additional net building index will be of municipal ownership. It is planned that land for this housing may be obtained via agreements. It is considered vital in order to maintain the level of diversity and mix of uses. 25% of housing development will be destined to rented accommodation.

In other cases, rehabilitation is also admitted, via a Special Plan, with the aim of converting existing industrial buildings into housing. Here there is the additional need to compare the district with successful experiences of rehabilitation in European and North American cities and, simultaneously, the idea that economic activity in many cases is linked to the occupation of large spaces and is perfectly compatible with housing.

In the case of new housing, a high standard is adopted for the free space and amenities that must be given up for this development: 31 m<sup>2</sup> of land per 100 m<sup>2</sup> of housing, similar to the provisions of the 14b key zone. This standard is much higher than the 18 m<sup>2</sup> per housing of green areas, adopted in most cases for housing development and regulated by the guidelines of the Legal Advisory Commission.

In this sense, it can be said that the MPGM far exceeds the need for increasing the free space required for the population's increase in density, as determined by article 75 of DL 1/90. This provision is guaranteed by the MPGM ensuring that its Special Plans must allow for the provision of the necessary public spaces and amenities, in accordance with the indicated standard, in all cases ensuring a minimum provision for public space of 18 m<sup>2</sup> for every 100 m<sup>2</sup> destined for housing.

5. In the general regulations concerning isolated intervention, which take as their basic unit the plot of land, and the possible units of action that could be specified to normalise the configuration of plots of land, the MPGM includes a slight increase in the building index of 0.2 m<sup>2</sup>roof/m<sup>2</sup> land, enough for more conventional activities or those which have no important costs related to transformation or transport, and adequate for a more classic industrial typology. This increase compensates for the resulting development charges and is linked to the Special Infrastructure Plan provided in the MPGM.

When more comprehensive internal reforms are deemed necessary, undoubtedly a Special Plan must be developed. This Plan will specify the ambit of the proposed transformation and define the necessary management areas. In these cases land concession is assumed, in order to provide the sector with amenities. These areas entail higher urban development charges relating to transformation expenses (transport, compensation, lease termination, etc. concepts included in development costs according to article 172 of DL 1/90).

It is significant that the activities to be located in the area should not be adjusted to the traditional industrial typology, which requires more building volume than the building index in terms of sq. m of built roofing. This also entails the modification of the regulations in order to allow for the new activities to be located in the area, and to have a building index adjusted to their functional needs. Within these activities, those which require a higher index for building and which are the characteristic of a modern activity district, are the ones which are defined as @ activities. It is obvious that this building index destined specifically for certain uses can encourage the introduction of this type of activity. An adequate density of these activities is a key factor for the success of this Activity District.

The building indices applicable in the areas of transformation are lower than those accepted in the PGM 1976 for land not included in partial planning areas, taking into consideration that industrial land with no partial plan was governed mainly by road alignment and height regulation (in terms of street width and building depth) resulting from the application of a percentage of occupation for "corona" type buildings. It is important to remember that the limitation of the 2m<sup>2</sup> roof/ m<sup>2</sup> land index arose with the later modification of the NU.

The complementary indices for specific uses are included in the NU (in a general sense in article 70 of the NU). In the current MPGM, urban uses are specified in sector activities that, for better explanatory purposes, are listed in the appendix to the regulations.

6. This activity sector characteristic of the District, and at the same time its promoter and driving force, with difficulty is attributed exclusively to one of the traditional urban uses, as is has characteristics of several. For that reason, an appropriate urban planning solution must be given to this services-industrial use related to new technologies and knowledge, laid out fully in this MPGM report and the attached list of activities.

7. The evolutionary nature of the Plans, expressed classically in the Exhibition of Motives for the Law of Land Law Reform, 1975, truly comes into its own when the Plan is adapted to business realities, and offers an suitable solution to new needs, facilitating the urban development conditions so that industrial land can be adapted to new production methods that have specific functional requirements.

Intervention are carried out by the corresponding Special Internal Reform Plans. In these, the mechanisms are specified for community to take advantage of the added values produced by the plan (article 47.2 of the Constitution, 3 Law 6/98), as well as the determinations which guarantee fair distribution of charges and benefits (article 5 of the Law 6/98). The concessions will be adjusted as laid down by the law 6/1998 and the Catalan legislation in force at the time these actions take place.

The formula of the urban development agreement relating to management provided for in the MPGM, although obviously not the only possibility for action, is widely used and has been recognised in the legislation of various autonomous communities. In any case, article 88 of the Law 30/1992, of the 26<sup>th</sup> of November, on the legal regulations of public administrations and common administrative procedure, lays down the agreement in a general sense.

10. 7@ amenities incorporate a series of new possibilities in the type of amenities covered by article 212 of the NU. The Special Plan elaborated must specify the precise destination and functional programme for these amenities.
11. There are additional dispositions extending the basic determinations of the MPGM in the action unit areas numbers 4 and 11 or the PERI Diagonal-Poble Nou. Their regulations are clarified by regulations annexed to the Regulations. The first area (UA 4) is incorporated in a determined transformation operation, whereas the second (UA 11) is configured as a planning area that may be developed by private initiative.

Regarding additional regulations, it must be pointed out that the regulation laid out in the PGM 1976 is adopted for those areas of operations with determined transformation, for land pending remodelling actions (Fifth DT)

## **Chapter 2**

### **THE NEW 22@ ZONE**

#### **Introduction: the new 22@ zone and the city of knowledge**

Barcelona has taken on a new challenge: to become fully integrated into the new technology revolution. The only city in the Mediterranean that, according to historian Jordi Nadal, has actively taken part both in the commercial and the industrial revolution now faces the challenge of a new economy based on knowledge. Poble Nou, the cradle of the principal nucleus of Spanish industrialisation during the XIX century, is today proposed as the main economic and technological platform of Barcelona, Catalonia and Spain in the XXI century.

The real Barcelona, the Barcelona defined by a labour market that offers practically two million workplaces and where about 4.4 million people live, is no longer the factory of Spain, the economy that, protected by tariffs, aimed its production towards the domestic market. Barcelona is today the first Spanish metropolis in competitiveness, exporting 22.5% of all Spanish industrial and non-industrial goods, ahead of the 10.5% of Madrid or the 7% of Valencia. The external balance of the Spanish economy revolves basically on the economy of Barcelona.

Barcelona, technological capital of Spain, is to become one of the principal technological capitals of Europe. The real Barcelona, the network of metropolitan cities headed by Barcelona, is rapidly changing its productive specialisation: practically two thirds of its exports today are of high technology or medium technology goods. To a large extent, the future of its competitive capacity will depend on its capacity to integrate new technology and to intensify the tertiary-industrial activities rich in knowledge.

The Barcelona municipal area acts as a central server of a multi-centred metropolitan region and as the capital of Catalonia, a basically urban country. If Barcelona wants to preserve its economic and occupational leadership it has to intensify its specialisation in those activities rich in knowledge that will be, in the near future, the activities providing a large number of jobs. The traditional economic-urban planning strategy of Barcelona was based on the fact that the predominant activity was manufacture, and that zoning by use in the central municipality of the metropolis was necessary to preserve these manufacturing activities. The change from an industrial manufacturing model to one adapted to the new technology revolution necessitated the extension of the 22 zoning to these activities, in order to promote a new productive and occupational base.

Recently, the zoning policy of the city has entailed the improvement of living conditions in all the city districts. Firstly, by improving the outskirts of the city, in a complex reconstruction of Barcelona. In the urban planning for the Olympic Games, the idea of extending the improvement in living standards to all areas of the city arose, facilitating the connections between the different districts and areas. It now seems possible to promote new production activities to some of the old industrial zones such as Poble Nou, as well as some higher functions such as training, research and development, also making possible the introduction of new advanced services and of new housing.

## **The transformation of the means of production.**

To take urban planning initiatives in a central area predominantly destined for production activities, with the intention of boosting its potential, makes us first think about the nature and characteristics of the production activity itself. More specifically, it obliges us to think about the new production activities that are currently generating the highest levels of development and wealth in developed countries. We are referring to the Information and Communication Technology sector (ICT), as well as those activities related with any other sector linked to research, design, publishing, culture, multimedia, database and knowledge management: in summary, those activities that use information as a raw material and whose end product is knowledge. In its recent study on the Digital City, backed by the Barcelona Industrial Pact and carried out by the Catalan Institute of Technology, this matter is analysed in detail and we refer to this study in this section.

The fact that traditional industrial companies have a lower value than those emerging companies in the more dynamic sector of the economy (ICT), illustrates how, during the last twenty years, the raw-material based atom culture has moved its value to the information-based bit culture, using the terminology made popular by Negroponte. Such a shift implies substantial changes that will affect all the structures as we know them today, affecting companies, work, training and in the economy as a whole, society. Society based on industrial capitalism, on the transformation of raw materials, is experiencing a revolution that has its epicentre in knowledge and heralds a new society of knowledge. A society organised according to the knowledge that people possess and the knowledge they can provide to organisations.

The introduction of computers into production processes and the development of digital technology has meant, on the one hand, a reduction in the price of products thanks to new management systems, labour savings, rationalisation of energy consumption and work reorganisation. On the other hand, increases in the capacity to store, process and deliver information are achieved at an increasingly lower cost. Today, in the main ODEC countries, 45% of jobs are related to information management and, if the trend of the last century continues, it will increase enormously. It is predicted that, in the year 2010, only 10% of workers will be dedicated to the manufacture or transport of material objects and, therefore, it is logical to conclude the economic growth will depend highly on the productivity of non-manual workers and on the systems that organise the production and circulation of information in a more efficient manner.

Knowledge acquires a strategic value for people, organisations and for society as a whole. Grey matter becomes the most important asset and this fact will have far-reaching consequences. In the first place, in order to develop within society people require a greater degree of training but, at the same time, the knowledge of these people, their skills and capacity for development, form a part of the principal assets of every organisation. The new situation requires greater responsibility and contact from people. Specialisation is no longer the basis of the work system and this now is organised around a set of multifunctional tasks in which, simultaneously, the management of global processes, capacity for innovation and specific knowledge, intrinsically linked to the technological domain, are manifest. The emerging model of organisation tends towards flexibility, decentralisation and the strengthening of the autonomy of individuals.

On the other hand, the economic interdependence that arises from internationalisation and the growing effects of markets on business decisions as a consequence of globalisation will lead to an increase in competition, which itself becomes world-wide. Survival lies in competitiveness, by producing more advantageously than which the market seeks. Competitive advantage is assured when the work requires resources that are difficult to find in the market, either because they do not exist or are difficult to acquire, difficult to imitate (if they cannot be found, an attempt can be made to substitute them for others) or rarely appropriate. Intangible resources (technology, organisational systems, values, prestige and culture) are more difficult to copy or transfer than tangible resources and now appear as a basic component of competition. All of these are related to some form of knowledge and know-how. Today, the principal sources of international commerce are technology and management capacity.

It is obvious that this new reality cannot be ignored in any consideration of the urban planning provisions for a production activity zone such as Poble Nou. For this reason, specific measures are proposed for promoting the installation of activities linked to these new emerging sectors; @ activities.

### **The urban planning processes for the installation of ICT**

Since the eighties, various cities around the world have started up projects for economic revitalisation, closely linked to urban transformation and the industries of knowledge. The pioneers in this field are what are known today as technological parks, characterised by being areas of new creation, well connected to urban areas that already had a centralising role within the world economy. Good communications, strong infrastructures and the synergies derived from contact and interchange between those integrated in the same field – businesses and employees – were to be found in the conceptual basis of these parks. From the initial example of Silicon Valley, the model has been reproduced with great success throughout the world, with particular success on the continent of Asia (Japan, Taiwan, India, Malaysia and Korea) where the largest parks have grown.

These areas, in many cases set up very quickly from absolutely nothing, were born linked to research, development and production in the sector of information and communication technology. They have evolved over the nineties, incorporating the sector of the “new media”, proceeding from the ICT but already differentiated by their relation to Internet and the multimedia industry (the “new media” firms are characterised by their dedication to exploiting the business possibilities offered by interactivity through the World Wide Web).

The adaptation process has not only meant investment in technology and infrastructure. It also entails the expansion of the objectives of the parks and the introduction of a new overall philosophy that more directly favours innovation (with the creation of areas that are specialised in research, training and incubating new businesses) and incorporates environmental quality and quality of life as decisive factors for production. From indifferent production-driven spaces, a move has been made towards parks with a clear division between this sphere and those of recreation and housing.

Parallel to this, and to a greater degree responding to the requirements of centralisation demanded by the “new media”, during the nineties a new trend started which has taken off particularly in Europe. Existing urban spaces, which had lost a good proportion of their productive functions, are being converted into areas specialising in ICT industries. The transformation of old urban areas into new areas dedicated to ICT has occurred not only in top-class world centres (London, New York)

but also in a wide range of medium sized cities of a regional nature. These smaller cities have not evolved at the same rate, but in both cases the existence of infrastructures, the flexibility of location and a high quality of life stand out as determining factors for success. This means providing these spaces with flexibility.

One of the most outstanding characteristics of the new urban centres is, precisely, to have flexible areas; for a varied supply of premises both in terms of size and functions to be developed there and their systems of ownership. On the other hand, infrastructure requirements do not only refer to telecommunications, the basis for the production of the “new media” sector. They also include general service systems for the buildings – water, electricity – and public transport, which is the only sustainable alternative to the state of collapse generated by traffic in the cities.

The evolution of the urban model undergone by the ICTs from the eighties right up to the start of the XXI century is a metonym of the process leading to the new society of knowledge and to the digital city. Starting from a classical urban model, typical of the era of industrial production, the technological parks are created, new estates for locating industries with clean production processes that gradually incorporate new functions. These functions are closely linked to the quality of life that has arisen as a result of a demand that is possible thanks to the complementary nature of the production system. The following step is a complete linking of the new activities to the urban fabric, making possible a juxtaposition of functions in one and the same space; a juxtaposition that emphasises the need to integrate all spheres and all the human parts of the society of knowledge.

For greater comprehension of these developments, an analysis is attached as an appendix to this MPGM, carried out by the Catalan Institute of Technology in different cities of the United States (Boston, Los Angeles, New York, Chicago, Portland), India (Bangalore, Hyderabad, Chennai), Taiwan, Malaysia, Korea, Japan (Gifu), Israel (Tel Aviv), Germany (Baden-Württemberg), Finland (Oulu), Italy (Turin), United Kingdom (Hoxton, Cambridge, Glasgow, Edinburgh) and Sweden (Stockholm and Ronneby).



## **Chapter 3**

### **URBAN RENEWAL OF THE POBLE NOU INDUSTRIAL DISTRICT**

#### **Objectives**

This modification of the PGM has as its objective the setting up of the urban conditions that are required for bringing to term a significant renovation within the district of Poble Nou and specifically in the areas that are currently classified as industrial areas.

The objective of renewing the productive activities requires recognising the characteristics of the new production processes and the specific urban conditions that these require.

Poble Nou has a substantial set of those elements that make it suitable for supporting this transformation, such as: its long tradition in the industrial history of the city, its existing productive fabric, good accessibility, metropolitan centralisation, its grid-based urban structure, etc.

The idea of setting up a new industrial dynamic led by activities that are emerging within the current productive panorama described in Chapter 2, make it obvious that many of the lines of action for bringing this project to fruition will not be strictly along urban planning lines. Pilot operations, consultancy, promotional activities, etc. will be treated basically in economic and management terms.

Within this context, the modification of the PGM considers the first step of what will be the physical transformation of the area and what will open up the way for other instruments such as the Infrastructure Plan and the Special Plans. Structural and strategic operations to specify the physical and technical forms will be required to support this renovation.

#### **Urban structure**

The urban renewal project is located on land occupied by activities on a grid pattern that has some obvious difficulties for transformation, but on the other hand allows the planning of local actions based on the existing road structure.

The fact that this is constituted by the Cerdà grid pattern, although not fully implemented and allowing for some of its significant deficiencies with regards to urban planning, has many advantages. The Cerdà grid has shown throughout history its organisational capacity, both from a functional and morphological point of view. It has allowed, for example, the successive change of use and of building typology that has occurred in the central "Eixample" area since its conception during the middle of the last century through to current times. What has also been demonstrated is its capacity to organise traffic in high-density situations.

The current grid is being enriched with recent urban operations. The extension of the Diagonal, the Maritime front, Diagonal Mar, together with other less ambitious operations that are providing the overall complex with new urban axes (Diagonal 2.5 Km, Passeig Garcia Faria 1.5 Km); large parks (Parc Diagonal – Pere IV 5 hectares, Parc Diagonal Mar 6 hectares), and a whole series of elements and open spaces at a local level (21 new elements of more than 1/2 hectare) create a strong and well vertebrated structure which could easily support the projected changes in use. It should be considered that the increase in housing will be minimal and, in any event, this is planned as autonomous and proportional to the necessary elements and open spaces.

On the other hand, the new productive activities will carry a light urban load, less than the current one especially in terms of impact on the environment.

Even so, consideration is being given to the introduction of new elements that, added to the current structure, will provide for a very high quality of life.

In line with approved criteria, it is proposed that the modification of the PGM will act on urban axes and strategic areas, for which it defines the scope of operations and parameters that will be developed by means of Special Plans. The following are the general objectives for the predetermined sectors of the Special Plan:

1. Develop particularly sensitive areas of Poblanou that, by means of public planning and management, will act as the motors for the transformation of the area, as well as urban condensers and identifiable emerging spaces that will help to "read" this part of the city
2. Grant coherence and a minimum of unity to the fabric and spaces of each sector, by applying the corrected or experimented urban instruments that may be considered as suitable – predetermination of the method, proportional measurement by-laws, flexible control of the architecture, process management, etc. The morphological cohesion must provide an identity and sense of location for each sector.
3. Ensure the necessary convergence of diverse uses in order to guarantee minimum functional complexity. In this sense, it will be necessary to place installations and free areas strategically and to study the compatibility of uses.
4. To provide sufficient continuity to the residential fabric, constructed by means of different typologies (road frontage, blocks, lofts, experimental types), in order to form axes or centres where there is a clear social appropriation of space (appropriation which is difficult in non-residential areas where the space is used on a temporary basis) and guarantee the presence of small services that accompany residential concentrations.
5. Exploit the spatial and typological richness that already exists to a large extent and which is now a distinctive element of the area.
6. Develop in each sector its own specific vocation based on the location and urban position:

The delimitation of the areas is as follows:

#### 1. Llacuna Axis

With the object of setting up a new axis that reinforces the sea-mountain relationship of the sector, it is proposed to transform Llacuna Street. This is not an extension of the road section via building realignment, but a reorganisation of its pavements in such a way as to incorporate open spaces, installations and activities. This new axis will make up a triple system in conjunction with the Rambla del Poblanou and Sant Joan de Malta, located practically in the centre of the activity district.

#### 2. Audio-visual field

The capacity of the Old Can Arañó factory and associated open space and installations to clarify the surrounding area allows for the location in the nearby blocks of activities related to culture and new audio-visual activities. The operation will have to re-organise the complex, maintaining the uses for public housing and open spaces in coherence with the neighbouring area of Llacuna Street.

### 3. Diagonal Park

A strategic operation is planned which will allow for the addition of an important activity centre fronting on the future Diagonal /Pere IV park.

### 4. Pujades-Llull (East)

The strip of blocks running between Pujades and Llull street, looking onto the Diagonal, have a singular importance at this point due to the proximity of the area of the new Diagonal-Mar centre, and because they constitute the façade of the avenue along almost three blocks.

### 5. Pujades-Llull (West)

Around these two streets three horizontal bands of blocks will have to provide the continuity between the traditional nucleus of Poblanou and the centre of the city, by means of a combination of activity and housing uses.

### 6. Pere IV-Perú

As a strategic element at the extreme north of Pere IV, this area will have to contribute to the creation of centrality and to reduction of building density.

The urban system made up of these elements will constitute a powerful structure that will determine a high level of "legibility" and urban quality. Outside this scheme, intervention may occur without any predetermined location, given that the basic vertebra of the complex will already be assured, and the grid scheme allows for actions to be taken in a detailed manner independently of other operations.

The octagonal network also allows for the organisation of mobility with several possible models that can even be adapted to the different phases of the process and to the requirements determined by the urban components as they appear. Even so, the objective of the Infrastructure Plan will be the definition of guidelines for the organisation of mobility and particularly for collective transport, a basic element for the perfect functioning of the sector and its relationship with the central city.

The modification of the PGM incorporates a scheme for road network hierarchy, proposed to the criteria as a benchmark in traffic organisation.

## **The complex urban fabric**

The proposed fabric is defined by the grouping of compatible uses and seeks its balance in mixture and diversity, both from the point of view of the urban form and activity. In this sense, urban and social continuity and cohesion will be achieved more by complementary elements than uniform ones.

It is proposed to strengthen new-generation production uses, but also to maintain existing compatible uses as well as the existing residential fabric, also admitting a small

proportion of new residences where the non-conventional housing, or housing set aside as residences for employees of the companies will take precedence.

Similarly, other uses that could be considered as installations and services, such as retail, sport, hotels, residential, etc, will complete the fabric. The configuration of a fabric of a central nature that could include this complex of uses must be provided with a density that guarantees perfect functioning, with strong interaction between the activities that comprise the productive and residential fabric and at the same time ensure its sustainability.

The proposed transformation will not occur in a conventional manner by sectors changing the urban form of the whole fabric, but by a range of scales of action that go from building on existing land, the reorganisation of a single block and right through to the transformation of axes or strategic areas that affect several city blocks.

The superimposition of actions on these different scales will have to provide the contents of the proposed activities at a gradual rate.

The most direct references of urban scenarios where processes of location of these activities have taken place correspond to centralised and compact urban models, as opposed to the more extensive and peripheral business parks. Chelsea in New York, Bangalore in India and Hoxton in London are some of the examples of the model in question.

Building types are moving away from the traditional industrial building of a single story and extensive horizontal occupation. They look for multistoried models that allow for better layout of production spaces, make it possible to locate mobility and loading problems on the inside as well as other services and, at the same time, ensure a more urban image.

These building types obviously require a higher building intensity than that required on industrial estates.

The existence of the Cerdà grid as a support structure has meant that the transformation instruments can be based on the city block. Consequently, the study of a suitable building index has been carried out on the city block, specifically the net building index applicable to plots of land.

The verification of organisation models suitable for the types to be developed work with net building indices that fluctuate between 2.5, 3 and 3.5m<sup>2</sup> roof/m<sup>2</sup> land. Even so, it would appear that these indices should only be established for transformation operations with the minimum of one block of land. This is because, not only will a good building rate be achieved with this dimension, it will also free up land for private logistic uses and public open spaces

The existing distribution in the central urban expansion area supports very high net buildingdensities:

Banc Atlàntic block	6.1 m <sup>2</sup> roof / m <sup>2</sup> land
Palau Robert block	3.8 m <sup>2</sup> roof / m <sup>2</sup> land
Pedrera block	4.5 m <sup>2</sup> roof / m <sup>2</sup> land
Pati de les Aigües block	4.7 m <sup>2</sup> roof / m <sup>2</sup> land

The proposed densities for the Diagonal-Poble Nou Special Plan are slightly lower, but in all cases maintain an index of above 3:

Standard square block	4.5 m <sup>2</sup> roof / m <sup>2</sup> land
Trapezoidal block on Diagonal	3.3 m <sup>2</sup> roof / m <sup>2</sup> land
Tapezoidal block at Glories	5.6 m <sup>2</sup> roof / m <sup>2</sup> land
Complex of blocks at Diagonal/Pere IV	3.8 m <sup>2</sup> roof / m <sup>2</sup> land

Comparison with the models proposed by this modification show how the net index is maintained well below the aforementioned references.

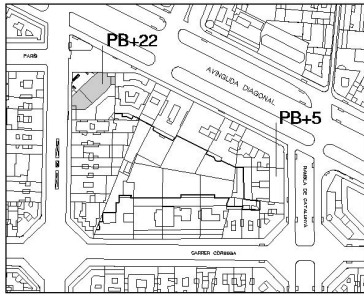
The pre-existing urban plans for the sector (plot and orographic outlines, old roads, historical settlements, industrial architecture, etc.) permits the incorporation of the proposed elements in the reorganisation. The idea of a fabric that maintains a distance with the central urban grid, with its own urban form and irregularity highlights the compatible mixture of uses and must prevail in the drawing up of the Special Plans at the time of defining the reorganisation.

Verification of the parameters adopted for the development of the physical organisation is based on consultations carried out with teams of professionals linked to the Polytechnic University of Catalonia. In the first place, in the work developed by the Poble Nou Projects workshop between February and June 1998 at the UPC (1), and later by consultation between 20 teams of architects 2) carried out between January and February 2000 on specific areas.

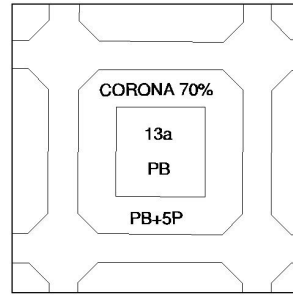
Certain common precepts can be seen in the findings of these studies, such as the search for a suitable index for the configuration of an urban scenario that is sustainable and coherent with new activities, together with the valuation of pre-existing architecture and existing outlines.

In their majority, the proposals avoid the consolidated models of the central grid area, based on volumetric regularity and alignment to the street, in order to investigate models that are based on a significant density, responding to a more flexible and open organisation.

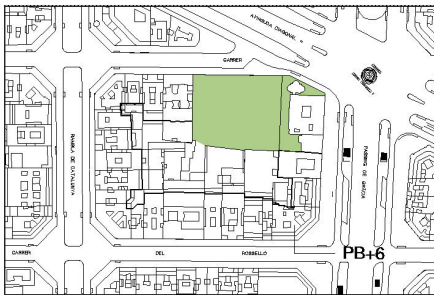
- (1) Workshop for Reprojecting the Eixample grid: El Poble Nou; Workshop direction: M. Corominas, Joaquim Español, Antoni Font, Joaquim Sabaté and Enric Serra.  
Workshop professors: Joaquim Español and Enric Serra.
- (2) Consultations Poble Nou: Jose Ignacio Abalos/Juan Herreros, Manuel Bailo, Eduard Bru, Joan Chico/Joan Carles Theilacker, Oriol Clos/Josep Lluís Sisternes/Adolf Martínez, Miquel Corominas/Joaquim Sabaté, José M. Ezquiaga, Francesc Hereu, Josep Llinàs, Xavier Llobet, Carles Llop, MBM Architects, Josep Parcerisas /Maria Rubert, Ricard Pie, Francisco Pol Carles Puig, Manuel Ribas Piera, José Seguí, Enric Serra, Manuel de Solà-Morales



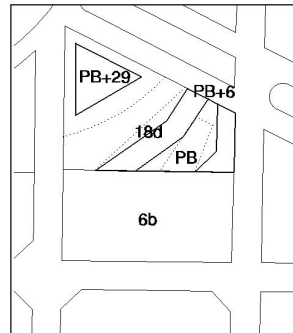
BANC ATLÀNTIC



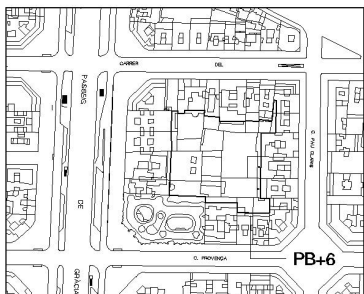
ILLA PGM



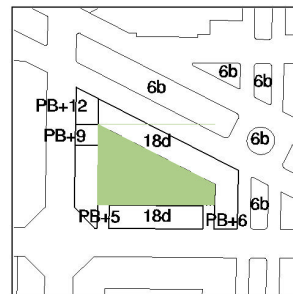
PALAU ROBERT



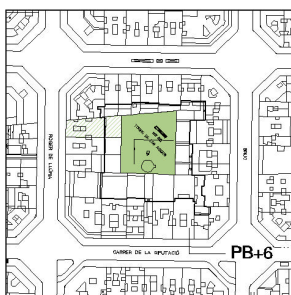
UA-1 PERI DIAGONAL POBLENOU



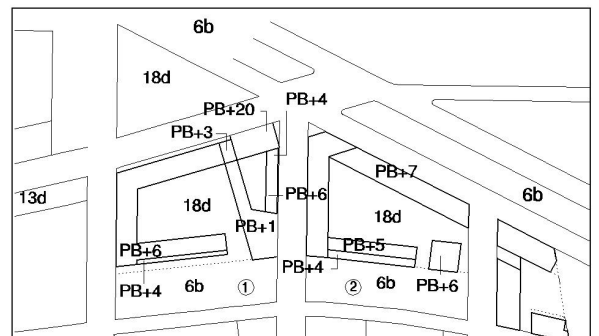
PEDRERA



PERI DIAGONAL POBLENOU



PATI DE LES AIGÜES



UA-9 PERI DIAGONAL POBLENOU

The definitive legal text regarding the Modification of the General Plan corresponds to the original text in Catalan.  
This document is intended to provide information only, and does not constitute a legal document.

## **Chapter 4**

### **REGULATION OF RESIDENTIAL STREET FRONTAGE IN THE 22a ZONES OF POBLE NOU**

#### **Presence of housing in areas of industrial renewal**

In spite of the “industrial” zone classification of the Poble Nou Sector, current rulings right up to 1953 did not explicitly prevent the building of housing. From the studies made and exhibited to the public in a criteria document it is recorded that, within these areas, there are 4,614 dwellings. Near to 90% of the housing in the existing industrial areas of Poble Nou – 22a – were constructed prior to 1953 and were therefore legally within urban planning regulations at the time.

As from the Regional Plan of 53, industrial and residential areas were clearly defined and differentiated. Since then there are still some seven hundred plots with residential buildings that have remained in a situation of “non-compliant to planning” although their construction was legal.

One of the priorities of the renewal work of the industrial areas of Poble Nou is the recognition of this housing as long as they become integrated into the new transformation criteria.

The presence of housing, to a specific degree, in an area of economic activity produces a positive urban effect. On the one hand, the presence of housing acts as an urban agglutinator, generating life and urban activity and, on the other, the concentration and diversification of activities and housing would make this area more sustainable. If the existing housing complies with urban safety and hygiene conditions proposed by the new planning model, it is quite appropriate to consider acceptance of their presence in the heart of these new areas, with an initial potential ratio of 2.5 million m<sup>2</sup> of built area to a total of 170 hectares of surface area, equivalent to 110 blocks in the Cerdà grid.

In order to renew the industrial areas of Poble Nou, the existing housing within the 22a area must first be acknowledged. The criteria document makes a special mention of this matter due to the strong residential presence within the area and to the regulation of the new 22@ area, and acknowledges the residential use for all existing housing.

It also establishes the conditions under which housing can consider an increase in volume. These cases will be determined by the existence of a consolidated front.

#### **The degree of consolidation of residential buildings**

The formation of the consolidated front is based on the evaluation of the degree of consolidation of each building relative to the following criteria:

For plots having a street frontage of 20 m in width

1.1 According to building height.....≥ 4 floors  
(Ground+3)

1.2 According to the number of dwellings..... ≥ 4 dwellings

A minimum of four floors is considered because this is a building that has been built to 50% + one floor of the number of floors relative to the regulatory maximum height of ground floor + 5 floors, generic parameter established for this type of installation in the urban directives of the current PGM.

The type of minimum plot, assuming one dwelling per floor determines the minimum number of 4 residences.

- For plots having a street frontage of  $\geq 8$  m in width

1.1 According to building height.....  $\geq 2$  floors (GF and 1 Floor)

1.2 According to number of dwellings.....  $\geq 2$  dwellings.

In the case of narrow streets, the height is reduced to two floors, since the maximum height considered pursuant to the parameters of the PGM is ground floor plus two floors per street of 8 metres in width.

Regarding the minimum number of dwellings, one per floor or two per apartment floor have been assumed

- Residential buildings, on being acknowledged in an isolated manner as residential buildings with the same characteristics of residential fronts, must comply with the following:

1.1 According to building height.....  $\geq 6$  floors (GF+5 Floors)

1.2 According to number of dwellings.....  $\geq 10$  dwellings

A minimum of six floors is assumed, as this is a building that has arrived at 100% or more of the number of floors relative to the maximum regulatory height of the reference key of ground floor and 5 apartment floors

The minimum number of 10 dwellings is determined by the type of minimum plot assuming a building of 6 floors with a ground floor with one activity and the apartment floors with housing – two per floor

### **Consolidated fronts**

Once the classification of the housing has been established according to its degree of consolidation – number of floors built and number of dwellings –the parameters to be complied with by the consolidated fronts are determined.

The consolidated fronts are groups of two or more plots with a predominance of consolidated housing within the industrial activity sectors.

They will be determined by the following parameters:

A.- Formed by two or more consolidated plots

B.- Bordered by consolidated plots

C.- At least more than 40% of the length of the facade of the front must be of consolidated housing.

The data for all the plots that constitute consolidated fronts, as well as for isolated plots of consolidated housing, are described in the following table where the general data are shown for this housing compared to the general data for the areas that are the object of this study.



## Consolidated fronts and isolated consolidated buildings

Plot size with housing building in the residential fronts in the 22a area of Poblenou		General information residential plots	Plot information included in the consolidated fronts	% of general	Plot information consolidated fronts without non-residential plots	% of general
<b>Basic data - pre-existing</b>						
Number of plots overall		1,605	<b>294</b>	18%	<b>274</b>	17%
Number of residential plots		696		42%		39%
Number of interstitial plots					<b>20</b>	
Area of plots overall		1,204,622	<b>73,185</b>	6%	<b>69,255</b>	6%
Area of residential plots		174,382		44%		40%
Area of interstitial plots		7,090				
Total roof area		448,595	<b>299,268</b>	68%	<b>286,460</b>	64%
Residential roof area		293,914	<b>199,500</b>	72%	<b>191,425</b>	65%
Interstitial roof area		20,556				
Housing proportion (%)		68%	67%		67%	
Average area per inhabitant		64	63		57	
Housing density per net hectare		38	<b>438</b>		<b>483</b>	
Number dwellings		4,614	<b>3,344</b>	72%	<b>3,342</b>	72%
Occupied dwellings		3,360	<b>2,669</b>	79%	<b>2,667</b>	79%
Proportion occupied dwellings (%)		73%	79.81%		79.80%	
Resident population		7,936	<b>6,237</b>	79%	<b>6,201</b>	78%
Pop. per occupied residence		2.36	<b>2.34</b>		<b>2.33</b>	
Pop. per residence overall		1.72	<b>1.87</b>		<b>1.86</b>	
Building index	residential	0.26	2.78		2.76	
	activities	1.46	1.24		1.37	
	total	1.72	<b>4.02</b>		<b>4.14</b>	
Residences per plot		6.63	<b>11.37</b>		<b>12.20</b>	

The number of plots with housing with consolidated façades (274) accounts for 17% of the total plots in the areas under study and 39% of the total residential plots.

They constitute nearly 2/3 (64%) of the housing roof area in the area under study.

34% of the housing (72%) is within the consolidated fronts. 78% of the inhabitants of 22@ live in this housing, giving a higher than average housing density (1.86 inhabitants/residence in comparison with 1.72 overall). What should be pointed out, however, is the low residential density compared with the average for Barcelona (2.5 approx.), a consequence of the existence of an older population and numerous uninhabited dwellings – near to a quarter (27%) according to land registry data for 95 – and seven points lower (20%) than the general statistics for the area, due to their greater concentration in more obsolete and less consolidated areas.

The average dimensions of the housing are slightly smaller than in general (from 63 to 64 m<sup>2</sup>) and below the average for Barcelona (72 m<sup>2</sup>).

The fact that near to 72% of the housing corresponds to only 39% of the plots indicates the concentration of dwellings relative to the general average, ranging from a building density of 1.72 to more than 4.14 m<sup>2</sup> of roof/m<sup>2</sup> land, more than double (2.15 m<sup>2</sup> roof/m<sup>2</sup> land) than that permitted in the 22@ area where they are located.

As has been stated previously, the housing currently existing in the industrial areas was constructed legally in previous stages prior to the approval of the PGM. As a consequence, their recognition does not entail a contribution of new population to the sector.

### **Conditions for the increase in volume in the consolidated façades**

Due to the urban situation and grid morphology, the following urban planning parameters of predominantly home usage would be the most suitable for applying to the consolidated facades within the areas of the Urban Planning Regulations of the PGM:

1. Application of the urban parameters of road alignment with the regulation heights of GF+5F for those plots fronting streets of 20 meters in width and of GF+2F for those fronting streets of 8 meters ("passatges").
2. Definition of the building depths based on pre-existing consolidated buildings for home use, adapting them to comply with the parameters for light and hygiene and ensuring they do not exceed the limits of functional proportions.
3. The exceeding of the parameters for regulation height and building depth for many of the consolidated plots will have to be classified as *non-compliant volume*, maintaining their current situation until they are demolished or their industrial use is converted to residential.
4. Obtaining local public space: although they may comply with the standard, it is necessary to create public spaces near to residential areas
5. The linking to protected housing when wanting to construct or expand a building with home usage within the consolidated frontage.

## Chapter 5

### REGULATION OF NEW ACTIVITIES

The previously mentioned evolution of the industrial model is not reflected in the current development regulation.

The PGM norm for industrial areas, the same for the whole metropolitan area, is still only based on activities that use traditional production processes. The nature of these activities, quite often a nuisance, dangerous or source of pollution prevents them from being compatible with other urban uses. This incompatibility is clearly reflected in the regulation of uses established by the PGM for key 22a industrial areas, that excludes uses that are not closely related to traditional industry, transforming the areas with this classification into special areas suitable for location in the outskirts of the city but incompatible with central urban areas.

The new urban model planned for Poble Nou as a district of economic activities requires the adaptation of the current framework of regulations, with the change from regulations based on kilowatts and decibels to a regulation based on bits.

The modification of the PGM plans to set up a new classification, called activity zone, which is defined as a subzone of the 22a industrial area, thereby updating the industrial regulations in line with new production methods. The objective of this new zone is to enable the renovation of uses in Poble Nou, centred on the development of new activities, in particular those based on new technologies, and also establish measures to start a process of improvement of the sector's urban quality. The new activity zone is identified with the key 22@ as a clear reference of its link to new activities from the digital world.

One of the aspects that distinguish the 22@ zone from the industrial is its variety of uses, and especially the nature of the new activities to be promoted. Clearly there are difficulties in defining in a precise way what is understood by this concept, as it concerns new generation activities that respond to a new economic model based on the society of knowledge. The concepts and definitions currently used for statistics, registries or the classification of activities are no longer adequate as they are based on the traditional production of manufactured goods, whereas the new activities are related fundamentally to the production of information and knowledge and the provision of advanced services.

#### **@ Activity**

In the regulation of the 22@ zone a new concept of @ activity is introduced which is identified as an activity particular to the area and is defined by the relationship it has with the new sector of information and communication technologies, research, design, culture and knowledge. The contents of this concept are identified via the description of the fundamental characteristics that distinguish these activities. Finally, included as an appendix to the regulation, is a list of activities included in the concept of @ activity.

For drawing up this list, the information contained in the study of a Digital City carried out by The Catalan Institute of Technology was used. The classification of activities from the sector of Information and Communication technologies was particularly taken into consideration, drawn up by the editors, as well as the classifications used by other statistical sources such as NCEA "National Classification of Economic Activities", Canada's publication "Industry Canada", NAICS: North American Industry Classification System, the US Department of Commerce, or the Donaldson Lufkin

Jenrette Investment Bank, Silicon Alley (Manhattan, New York), and also the activities listed in the "Tableau de bord de l'OCDE, de la Science, de la Technologie et de l'Industrie, 1999".

There is a difficulty, as mentioned before, in accurately defining these activities and also in drawing up a comprehensive list of activities. As a result, the creation of a Technical Commission has been proposed, made up of experts in the field, capable of bringing up to date the list of @ activities and also of interpreting and evaluating the adequacy of urban planning proposals

## **Regulation of uses**

The regulation of uses for the 22 @ zone are defined in line with the new urban model proposed for Poble Nou.

The uses admitted must allow for the development of new productive activities, @ activities, and also for the shaping of a complex fabric that will provide the sector with the characteristics common to a central area. This fabric must integrate the already existing housing, as mentioned in chapter 4 of this report.

The rules of this MPGM define the uses allowed in the new zone and the conditions under which they can be developed. As will be seen, some of the uses are accepted directly and others are accepted in the development of transformation operations via Special Plans.

Many of the new productive activities do not fit into the current regulation of use for industrial areas, since they hover between the secondary and tertiary sectors. If we stick to the use classification established by the PGM, the range of activities we are referring to are integrated in both industrial use and office use. These two uses must therefore be considered for the new area.

**Industrial use.** The coexistence of the diverse uses proposed requires the definition of a compatibility framework from which industrial activities considered a nuisance, polluting or dangerous, must be forcefully excluded. The classification of industrial activities according to the NU of the PGM is based on categories that are differentiated according to their degree of compatibility with housing. Therefore, industrial use is maintained, although limited to the first, second and third (in certain situations) categories, these being the categories that fulfil this requirement. Industries in the third category are only admitted on the ground floor or in buildings not destined for housing (situation 2b) or when situated in buildings especially conditioned to avoid annoyance, as defined in article 288.2 of the NU, or buildings separated from housing or other uses.

The activities of transport and goods storage deserve special treatment. These activities, although historically installed in Poble Nou, have moved to specialised industrial estates in the outskirts of the city and still have a strong presence in the sector. The inconvenience and local degradation caused by the circulation of heavy vehicles, and the current extensive use of land required for the accommodation of haulage agencies are all incompatible with the new proposed urban model. However, distribution centres at a lesser scale are necessary for the correct functioning of an economic and productive activity sector as the one proposed. This activity is therefore accepted with restrictions. The limitation is established by taking into account two aspects, the surface area of the installations and the characteristics of the vehicles used.

Warehouses, which present a similar problem, are only allowed when they are integrated with other activities or are developed with a logistic activity, excluding installations used exclusively for storage. They are under restrictions of surface area.

The first provisional stipulation of the regulations regulates industrial activities that remain in a situation of non-conformity due to this new regulation of uses.

**Offices.** As mentioned before, the admittance of office use is necessary to enable the implementation of the new activities. However, their generalised and direct admission could give rise to an unwanted amount of tertiary activity in the sector and would lead to a dispersed model that would not be adjusted to the demand requirements of this product.

This use is only accepted in intervention developed by Special Plans. The regulation established for this special derived planning will enable the establishment of offices in ideal places and achieve the desired levels of concentration.

**Housing.** The new situation of compatibility of uses in this sector enables, as mentioned before, to incorporate housing in several circumstances and in a limited way.

- a) Housing in existing buildings is directly admitted with no planning procedures.
- b) The extension of these buildings is admitted if they are presented grouped as consolidated façades.
- c) It is compulsory for proposals to achieve a ratio of 0.3 m<sup>2</sup>roof/m<sup>2</sup> land, applied to the plot destined for protected housing.
- d) Reuse as housing of existing industrial buildings that do not exceed the index of 2.2 m<sup>2</sup> roof/m<sup>2</sup> land and that meet the criteria established by the rules. The MPGM includes a brief list of buildings which, due to their characteristics, can be reused as housing.

The creation of new housing in cases b), c) and d) will always be conditioned by the contribution of free areas and amenities at a proportion of 31 m<sup>2</sup> of land for every 100m<sup>2</sup> of roof surface area for housing.

The importance of housing in the areas of activity, in the small proportions that this MPGM proposes, has been widely discussed in chapters 1,3 and 4 of this report and will contribute to the cohesion of the urban fabric.

The regulation of uses for the new 22@ zone also incorporates the rest of the uses generally admitted in other areas of the city: commercial, residential, public health, religious, cultural, sport and leisure. However, limitations, or specific conditions (in many cases the incorporation into the proposed intervention), have been introduced:

**Commercial.** Generally admitted, except large shopping centres, as defined by the Law of Commercial Amenities, of the 24th of March 1997.

**Residential.** The activities admitted are the ones provided in article 277 of the UN, and within this use, buildings directly related to companies installed in the area that provide temporary accommodation to staff, when these are included in interventions developed by Special Plan.

Hotels must also apply via a Special Plan.

**Leisure.** This use is admitted within the limitations determined by the Special Plan of Public Establishments of the Sant Martí District. This Plan must be drawn up in the period of one year, as it is the most adequate instrument to fulfil implementation conditions and limitations for these activities. It conditions the acceptance of new music bars, included those classed as F in the Law for Public Premises, in a specifically defined area of enforcement. Determinations are established for the Special Plan which limit the implementation of public establishments (discotheques, music bars, etc) following the criteria established in the Special Plan which has developed these uses in the city districts.

The norm of the MPGM incorporates the relevant rules that control the provisional situation of those activities not accepted, according to the new regulation of use for the 22 @ zone.

## **Chapter 6**

### **INTERVENTION**

#### **Predetermined interventions**

The regulations of the MPGM control the level of intervention via Special Internal Reform Plans.

Some of these actions are specifically shown on map no. 2 and respond to very specific objectives already mentioned in the criteria document and also explained in chapter 3 of this report. These actions plan the physical transformation of the territory for the creation of new urban structure elements, or to enable the implementation of activities that might play a strategic role in the creation of new dynamics in the sector. Six areas of transformation are demarcated: Llacuna Audio-visual Campus, Parc Central, Pujades-Llull (Llevant), Pujades-Llull (Ponent), Pere IV-Perú.

As these actions play an important role in the definition of the sector's structure, it has been determined that the Special Development Plans for these areas shall be promoted by public initiative.

The MPGM defines the parameters and conditions under which the Special Plans must be controlled in order to define the regulation of each one of the areas. They also define the provision of the land to be transformed given that, as a planning model of intermediate scale, allow for a better approximation to reality.

#### **The building index and uses.**

The building index is taken from a net rate of "buildability". This is fixed at 2.2 m<sup>2</sup> roof/m<sup>2</sup> and should be applied to the net surface area of a block classified as 22@. The additional 0.2 m<sup>2</sup> roof/m<sup>2</sup>s in relation to the general building index of the 22a zone (2m<sup>2</sup> roof/m<sup>2</sup>s), is established as compensation for development costs related to the Special Infrastructure Plan.

The purpose of the development potential derived from this high degree of building will be specified in the Special Plan, which will control in detail the activities that may be developed within the areas of intervention subject to the regulations of use for the 22@ zone, whilst complying with the objectives proposed by each one of them. As has been mentioned in the previous chapter, The Special Plans will be able to incorporate non-admitted uses in a general way in the 22@ zone, such as offices, hotels or dwellings destined to accommodate personnel from companies installed in the area.

The use of housing is admitted in a restricted but obligatory way, establishing a roof area limit derived from the 0.30 m<sup>2</sup> roof/m<sup>2</sup>s index, as a maximum destined for housing, which in any case will be designated as protected housing. As mentioned in the previous chapter, housing plays an important role in creating a cohesive fabric: however, its admission in a non-restrictive way could alter the urban model proposed for Poble Nou. This general index increases to 0.5 m<sup>2</sup> roof/m<sup>2</sup>s in these predetermined circumstances in order to improve the provision of services, infrastructure and parking space in the area. This increase could also be destined for housing under some kind of protection regime.

These areas developed by public initiative should slightly improve the area's provisions, significantly reinforcing further intervention in non-designated areas. Hence the provision for this increase.

With the aim of boosting the implementation of new activities in the area, a complementary net index of 0.50 m<sup>2</sup> roof/m<sup>2</sup>s is defined which could be added to the net index exclusively for @ activities. Granting this complementary index is conditioned by the identification of business initiatives involved in intervention regarded as @ activities. To this effect, the Special Plan should specify them in detail and guarantee their continuity. Concerning the identification of activities as @ activities, the Special Plan should look to the report from the Advisory Commission mentioned in chapter 5.

### **Concession standards for systems**

The incorporation of the use of housing in action areas requires the provision of the corresponding reserve for free areas and amenities. A minimum amount of compulsory and free concession land is established with this aim in mind, of 31 m<sup>2</sup> for each 100 m<sup>2</sup> of roof area for housing. This quantity is the result of considering a reserve of 18 m<sup>2</sup> of free space and 13 m<sup>2</sup> of amenities per residence, in line with the standards contained in the PGM for the 14b remodelling zones.

Independently of these concessions, a specific charge for the whole transformation action is established, the concession of an area equivalent to 10% of the development to be destined for new amenities.

The regulations especially provide that these concessions are effective in the area itself or in discontinued transformation areas. The Special Plan will classify the land with this purpose and establish the corresponding management mechanisms.

### **Interventions not defined by the MPGM**

Independently of the actions described above which have, as mentioned before, a structural character, it is considered important, in order to promote renovation in the sector and programme, if necessary, new strategic actions, to boost the development of interventions that are not specifically defined by the MPGM. The Norm opens the possibility of carrying out these actions via a Special Plan of public or private initiative, under the same conditions of the specified actions with the exception that the complementary building index for municipal ownership is not increased but maintained at 0.3 m<sup>2</sup> roof/m<sup>2</sup>s.

In order to guarantee the coherence of the distribution and the significance of the transformation, the Cerdà block is established as a minimum planning unit as well as the possibility to encourage transformation by ensuring that interested owners have 60% of the land. Conditions are also established on the scope of effective transformation to guarantee the transformation and, at the same time, have enough flexibility. With the aim of ensuring that charges and benefits are distributed, easing the discontinuous nature of concessions, the Public Administration will adjust the scope of private initiative developments, incorporating pieces located in different blocks.



## SUMMARY OF DEVELOPMENT SYSTEM FOR THE 22@ ZONE

### 1. Intervention

**Predetermined** (internal reform interventions defined by the MPGM)

- a) Llacuna
- b) Parc Central
- c) Campus Audio-visual
- d) Llull-Pujades (East)
- e) Llull-Pujades (West)
- f) Perú-Pere IV

#### **Optional**

The MPGM has determined that internal reform interventions will be developed in addition to the predetermined actions.

The basic defining criteria for the planning ambit is an Eixample-type block or a block defined by a "passatge" (mews).

The planning scope must be adjusted depending on the existence of consolidated fronts and industrial buildings that can be excluded.

From this "corrected" scope the intervention are applied to 60% of this area.

Those owners with a significant percentage of 60% (80% in the case of narrow "passatge" blocks) of this transformation range may formulate a plan.

In no case is public initiative excluded.

#### **Common Rules:**

##### Building Indices

- Indices:
  - \* 2.2 m2 roof/m2s general uses 22@ (without housing, raised to what corresponds to the relocation of already existing housing)
  - 0.5 m2 roof/m2s @ activities
  - \*\* 0.3 m2 roof/m2s protected housing, municipal ownership
- \* The 0.2 m2 roof/m2s index that complements the general building index for the industrial area (2 m2 roof/m2s) is set as compensation for the increase in development costs, related to the Special Infrastructure Plan.
- \*\* In predetermined interventions, the municipal ownership complementary index is 0.5 m2 roof/m2s, destined for the provision of infrastructures for technical services, parking space for sector services and protected housing.
  - The building index of 0.5 m2 roof/m2s destined for @ activities can be included in the regulations. The PERI must establish the rules to make it effective (when concerning a @ activity).
  - Concession of standard land: 31 m2 for each 100 m2 of housing (18 m2 per green area), 10% of the area destined for amenities and other concessions preferably destined for protected housing

## **2. Isolated actions for @ Activities, hotels, provision of uses art. 6.2**

- Special Plan
- 2.2 m2 roof/m2s
- 2,000 m2 plots (except for service provision purposes)
- Conceived as actions that are the motors of urban transformation, prior to the block intervention
- Urban planning charges

## **3. New industrial buildings and other accepted uses:**

New “industrial” buildings

- Direct license with urban planning charges
- Industrial uses as per regulations contained in article 6
- Building regulations as article 8
- 2.2 m2 roof/m2s

## **4. Building height**

- Identified in maps P.3 and P.4
- Developed by Special Plan
- New housing is protected, creating concession standards of 31m2 per 100 m2 of housing (18 m2 green area)

## **5. Regulations on existing buildings** outside the specified areas of transformation which are to be the object of PERI public initiative (the ranges under PERI have the anticipated provisional regulation applied to them, the PERIs must specify the appropriate regulation for the existing buildings)

### **5.1 Actions on existing buildings** (general regulation)

- a) Works:
  - in accordance with art.8
  - those allowed as per art. 93 of the D/L 1/90 for non-compliant buildings
  - volume increases in accordance with article 8 general building regulations
  - if affected by “outside regulatory regime” systems
- b) Current activities:
  - existing industrial uses which are not accepted “Non-conforming situation”
- c) New activities
  - for industrial uses: adjusted to conditions of art. 6
  - other uses 311.1 NU

### **5.2 Actions in existing consolidated industrial buildings for the implementation of new uses only accepted in intervention.**

- Buildings likely to be excluded from the transformation scope (2.7 m2 roof/m2s consolidated uses)
- Reuse requires a PERI with a regime of concessionary urban planning and development charges equivalent to the intervention. The internal reform interventions provide the necessary building and land for concession (discontinued

areas, or even substituting the concession charge for the financial equivalent). The roof surface area is used for reference.

### **5.3 Actions in existing industrial buildings reused as housing: lofts**

- Special integral Plan and concession of systems, 31m<sup>2</sup> for each 100 m<sup>2</sup> of housing roof area (18 m<sup>2</sup> for green area) and urban development charge.
- May not exceed the 2.2 m<sup>2</sup> roof/7 m<sup>2</sup> index.

### **5.4 Existing housing**

- a) In consolidated façades, extensions and new floors require a Special Plan
- b) Isolated: maintenance; if necessary, the PERIs of the transformations actions specify the regulations
- c) Buildings recognised as existing housing in existing use transformation areas of the PGM and/or affected by the road network, will maintain the limitations of their respective classification according to the PGM.

**DEVELOPMENT OF THE 22@ ACTIVITY ZONE**  
**BENIFITS AND OBLIGATIONS**

Action	Bulding Index	Plann ing	Min. Area	Permitted Uses	Concession of developed land			Other concessions*	Urban dev. obligations	Protected Housing
					Stree t	Free space and amenities (18m <sup>2</sup> +13m <sup>2</sup> )	7@			
New floors in building	2.2	Lic.	Plot	22@ restricted	Y	-	-	-	Y	-
		SP	2,000 m2 plot	Hotel/@ Activit.						
			Plot	Service provision						
Re-use of existing ind. building - non-conf. volume	(2.2) existing temporary	SP	Plot	@ Activit. / hotel	Y	agreement * (materialised benefit)			Y (proportional to roofing)	-
Re-use of existing ind. building - conf. volume	2.2	Lic.	Plot	22@ restricted	Y	-	-	-	Y	-
		SP	Building of interest	Housing		31 m2				
Transformation operation	2.2 + 0.3(housing)	SP	Block	22@ (0.3) obl. housing	Y	31 m2	10%	agreement*	Y	100%
Transformation op. with @ activity	2,2 +0.5 (@ act.) +0.3 (housing)	SP	Block	22@ (0.5) 22@ act. (0.3) obl. housing	Y	31 m2	10%	agreement*	Y	100%
Transformation op. with @ activity (scope limited by MMGP)	2.2 +0.5 (@)act.) +0.5 (park., serv., tech., housing)	SP	Block	22@ (0.5) 22@ act. (0.3) obl. housing (0.2) park., serv., tech., housing	Y	31 m2	10%	agreement*	Y	100%
Existing housing	Existing	-	-	housing	-	-	-	-	-	-
Existing housing in consolidated front	Existing + Δ volume GF+5 (20 m streets)	SP	Consolidated front	housing 20% other uses	Y	31 m2	-	-	Y	100% of increment

\* Concessions in accordance with Law 6/98 and the Catalan regulations in force at the time of agreement.

## **Chapter 7**

### **PROVISION OF INFRASTRUCTURE (Infrastructure Plan)**

The evolution of urban renovation processes in the city of Barcelona during the last ten years has created a situation that is, up to a point, quite surprising as far as Poble Nou is concerned. Even though the investment generated by the Olympic Games resolved some of the basic problems in this respect (opening to the sea, ring road, commercial centres, sewer system, etc.), it must be recognised that the internal urban fabric of the sector is still suffering from a very obvious infrastructure deficiency, which is clearly incompatible with the aims and functions proposed by the plan. This situation means that infrastructure provisions of the sector as a whole must be incorporated as one of the fundamental objectives of the plan, as well as the necessary mechanisms and procedures for its completion.

Moreover, there is currently a need to define a modern infrastructure framework, as strong competition in the provision of some of the most important public services (telecommunications, energy, etc.) is pushing the city, for the first time, to define an infrastructure standard adapted to these new circumstances. The aim of this type of plan therefore has to be the identification of the level of availability of urban services different from other industrial sectors, in such a way that they form an element unlike any other.

To achieve the development of this project it is essential to co-ordinate a broad Special Infrastructure Plan which will act upon public areas as well as private community ones, determining surface land and underground land aspects. The content of the Plan will include aspects related to the water cycle, use and production of energy, cold and heat processes, waste, data and voice transmission networks, mobility and street furniture. In this way, sustainability parameters can be introduced at the same time as the creation of the infrastructures necessary for the development of the ICT.

#### **Road Network Regulations**

The Infrastructure Plan will define the road network, differentiating primary streets destined for circulation with good capacity and bus lanes where necessary, as well as secondary streets for local traffic with bicycle lanes, meter parking for cars, bicycles, motorbikes and a short-term loading and unloading area.

The Plan must make provisions for the facility for road traffic management, achieving optimum management and thorough information to the media and public road users by means of new integrated systems for traffic lights, road signs, dynamic data storage and processing.

The parking Plan should attempt to absorb the residential demand of the area and surrounding areas, as well as part of the demand at only specific times. The interior of the blocks will have special places for loading and unloading operations.

#### **Public Transport**

In order for the mobility structure of the area to be feasible and the indicators acceptable, it is necessary to achieve a better transport distribution in which public transport is predominant. Especially necessary are: a new underground line running along Tànger street, the extension of the underground in Diagonal-Plaça Glòries-Rambla Prim, and the availability of coverage of fixed infrastructure systems along the coast and Pere IV.

## **Underground land Regulations**

The Plan will provide transport infrastructures for the service networks in the underground areas of public roads, by galleries, special channels and recording cameras. Blocks will be interconnected by service galleries transversal to the streets and situated at basement level. These galleries will allow access from the service networks to inside the blocks, as well as connecting the blocks with other services.

It is also planned to implement a distribution channel running along the kerb of the block for all external services (traffic lights, lighting and others), as well as arriving at non-transformed blocks. The capacity of these networks will allow servicing this area without having to perform roadworks after the urban development.

Inside the blocks, the Plan covers the installation of plant-rooms for locating the different types of equipment, as well as internal channel links for the distribution of services inside the blocks.

## **Water cycle**

The Infrastructure Plan will propose the renovation and completion of the coverage of a drinking water network, and will structure and define the uses for phreatic water: cleaning, watering, heat exchange as well as the restricted and controlled use of non-drinkable water in industrial and commercial premises.

The sewage network will be completed according to the provisions of the PECLAB, which has a great influence on the area's secondary network.

## **Selective waste collection**

The Plan includes the selective collection of waste via pneumatic collection with accesses to buildings when they are new or refurbished and on the street when they are consolidated façades or buildings. The system will be complemented with the collection of cardboard and glass in containers placed in a private location. This model requires the placement of pneumatic tubes under the public roadway when developments is taking place, at the same time increasing the number of collection points currently in existence.

The area will also be provided with arrange of cleaning equipment and a rubbish dump.

## **Energy**

The Infrastructure Plan will introduce latest generation proposals as far as energy distribution and its efficient use are concerned, in accordance with current environmental protection regulation.

The gas network will be renewed in the parts of the new urban development and the coverage will be extended.

Civil infrastructure and reserved areas with which the zone will be provided should allow for the implementation of centralised air conditioning systems – hot and cold – with prior municipal concession. Production can be via co-generation and the distribution network will use hot and cold water pipes. In order to take advantage of solar energy, thermal panels will be used to supply hot water, as detailed in the regulations. The Plan proposes to obtain electric energy from photovoltaic panels.

For the electricity network, the Plan anticipates the construction of a transformer substation connected by a service tunnel to the existing coastal tunnel (along the Ring Road), and distribution in the zone by a medium tension cables network and service galleries.

### **Telecommunications**

The Plan provides for a network of galleries, tubes and cables that enable a reasonable number of operators to provide new services. Blocks will have plant-rooms to allow for the installation of telecommunication equipment or nodes.

Radio communications will be considered by the Plan in terms of operational capacity and the visual impact of the aerials, cable accesses, collective spaces and installations and multioperators.

Development projects derived from the Special Plans will consider the executive projects of each system in accordance with the regulations.

## Chapter 8

### AMENITIES

The modification of the PGM proposes to reclassify some of the amenities as @ amenities, in which activities related to training, research and business could be developed.

These amenities are a specific provision for the 22@ zone and should receive the research and exchange of knowledge developed by co-operation between universities and business

Research and education fields are increasingly linked to business and, of course, to universities, so that a lot of these activities are developed in a common physical space. It is here that the proposed reserves can play a very important role.

The sites have been selected for their location at special positions in the structure, which allow them to be contemplated as a large-scale city facility.

This provision must not prevent any already reserved local residential provisions with the approved planning (Diagonal- Poble Nou, Diagonal-Mar, Maritime Front).

In the sector as a whole, the planned local amenities should meet the needs of the future population and allow for the reserve of 7 @ amenities, classified directly from the current modification.

In public amenities classified as 7@, the complementary productive uses to be developed must in no way lead to a modification of the public ownership of the amenities. Therefore, as a general rule, in the case of indirect management a concession is anticipated.

Facility provisions must be developed along with the intervention. The PERIs should classify land with this destination equivalent to 10% of the concession ambit. New housing also generates new facility provision. In some cases, this provision (13 m2 for every 100 m2 of housing) can be partly destined to increase the free areas, increasing the standard of 18 m2 per home.

In the development of a system of communal facilities, the elements that will contribute to the preservation of the heritage of the industrialisation of Poble Nou will be taken into special consideration.



## Chapter 9

### MANAGEMENT

All the interventions provided for in the current MPGM can be organised into two great management schemes. The first refers to the provision of infrastructure through the approval of the Special Infrastructure Plan, its development in work projects and the finance mechanisms. The second depends on whether the interventions are defined in the MPGM or not.

As far as the management of the infrastructure provision is concerned, the MPGM expressly anticipates that the costs, except for the part to be met by service suppliers, will be met by the landowners as long as the land is not occupied by housing. It is considered that the planned infrastructures are fundamentally justified by the essentially economic nature of the activities being undertaken. The Infrastructure Plan must establish the basis of the agreements that regulate the financial share of the service suppliers of the costs derived from the implementation of infrastructures.

The total estimated cost of the infrastructures is 19,780 million pesetas, based on a unitary price of 30,000 ptas/m<sup>2</sup>.

Concerning action systems and transformation management procedures, the MPGM refers to the derived planning (PERIs) so that it can be adjusted more accurately to the specific conditions of each action unit. In all cases, article 169 of DL 1/90 will be applied. The MPGM expressly demands that the Special Plans certify the fulfilment of the principles of community participation in the added value generated by the plan and the balance between benefits and charges. To ensure that these principles are complied with in a way that is in accordance with the relevant law, the MPGM anticipates the possibility of establishing, if required, concessions for exploitation in accordance to the Law 6/98 and the relevant Catalan legislation.

The MPGM also provides for the participation of an Advisory Commission, made up of people with recognised technical and professional standing, in the adaptation of the series of @ activities to the economic reality of each moment. This process should always be undertaken via a Special Plan, which will normally be the same that regulates the transformation action.

There is no doubt concerning the transforming potential generated by this MPGM, making it necessary for the municipal authorities to adopt organising measures to ensure the principles of effectiveness and efficiency in the public management of this process. Nevertheless, the City Council, in the use of its organising faculties, will decide which forms of management are more convenient among those offered by current regulations.

## Chapter 10

### COMPARATIVE TABLE OF THE PGM LAND CLASSIFICATION AND THE MODIFICATION

SYSTEMS	PGM	MPGM
	Surface area in m <sup>2</sup>	Surface area in m <sup>2</sup>
7a	30,123	15,097
7b	63,867	17,129
7@		61,764
6	1,286	1,286
6a	1,969	1,969
6b	28,254	28,254
3	3,978	3,978
5	659,343	659,343
Total	<b>788,820</b>	<b>788,820</b>
<b>ZONES</b>		
12	1,476	1,476
13hs	3,873	3,873
13d	698	698
18	811	811
18*hs	1,170	1,170
17\6	12,457	12,457
17\7	14,519	13,769
22a	1,126,961	
22d	18,214	
22o	8,794	
22t	4,906	
22@		1,159,626
Total	<b>1,193,880</b>	<b>1,193,880</b>
<b>Total area</b>	<b>1,982,700</b>	<b>1,982,700</b>

## **PLANNING REGULATIONS**

---

### **THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

#### **AMALGAMATED TEXT**

The definitive legal text regarding the Modification of the General Plan corresponds to the original text in Catalan.  
This document is intended to provide information only, and does not constitute a legal document.

## CHAPTER 1. GENERAL CONSIDERATIONS

### Art. 1. Scope

The scope of the Modification of the General Metropolitan Plan (MPGM) includes the land in Poblenou shown on map number 1, broken down in three non-contiguous sectors located on both side of Diagonal Avenue.

For promotional and communication purposes of the proposal, the scope of planning is named: "22@Barcelona Activity District".

### Art. 2. Objective

The objective of the MPGM is the renovation of industrial land of Poblenou in order to create a district of modern business activities with infrastructure and developments adapted to business requirements and a significant presence of emerging activities from the new sectors of information and communication technologies (ICT), research, culture and knowledge. Also to favour the diversity of use in the area, with the acknowledgement of existing housing and the plan to add those uses which are complementary to housing and residence and compatible with the activities.

### Art. 3. MPGM Documentation-Interpretation

1. The MPGM is made up of the following documents:

- Report
- Regulations
  - Appendix 1: @ activities
  - Appendix 2: Industrial buildings reusable as housing
- Financial study
- Action plan
- Maps:

P 1	Current planning	e:1:5000
P 2	Proposed urban development classification	e:1:5000
P 3	Existing housing	e:1:5000
P 4.1	Existing housing	e:1:2000
P 4.2	Existing housing	e:1:2000
P 4.3	Existing housing	e:1:2000

2. The Urban Regulations are regulatory, as well as Appendix 1 and maps P2, P3 and P4.

3. Determinations of the MPGM are interpreted in accordance with the Urban Regulations of the General Metropolitan Plan, which apply in any case that is not expressly regulated.

4. A Technical Commission from the Barcelona City Council will give information on the derived planning of the MPGM and will put forward proposals to government bodies for the for the adoption of interpretative dispositions or clarifications of these determinations, in relation to their development. In any case, it will be the role of the Commission to guide the architectural formalities of the proposals of the plans and public and private projects within the range of the MPGM.

5. The Commission will also answer queries regarding the criteria to be followed in respect to the formulation of plans and projects.

#### **Art. 4. Classification of Land**

1. The MPGM defines the key 22@ area of activity and the land to which it grants this classification.

It creates the key 7@ type of communal amenities related to @ activities and defines the land with this purpose.

It maintains the rest of the existing regulations currently in force.

2. The Urban Improvement Plans will develop and, whenever necessary, modify the classifications incorporated, with the aim of defining the necessary provisions of green areas, free spaces, communal amenities, roads and other services, in order to carry out the internal reform objectives.

### **CHAPTER 2. REGULATION OF ACTIVITY ZONE (22@)**

#### **Art. 5. Definition**

This area includes the current industrial land which is the object of the urban transformation regarding infrastructures, urban development and renovation of uses and buildings. The aim is to promote the development of business activities coherent with new production methods, compatible with housing and, in particular, those methods based on ICT in the overall framework of improving urban quality.

The 22@ area of activity is formally defined as a subzone of the 22a industrial area and is ruled by the dispositions of the Urban Regulations (NU) of the PGM for the 22a area established in the following articles.

#### **Art.6 Use Regulation System**

1. The following uses are permitted in the 22@ area of activity:

**Industrial.** Accepted:

- a) First category industrial activities
- b) Second category activities at a level of 2a or higher, and third category at a level of 2b or higher, with the limitations that are established in each case by art. 15 of the Urban Improvement Plan
- c) Activities in categories higher than the third level which are considered @ activities and are in industrial buildings at a fourth or fifth level.
- d) Goods transport centres in the category of collection and distribution of packages, on the ground floor, with a maximum storage capacity of 400 m2 and a total of 500 m2, that use vehicles with a maximum load capacity of 1000 kg. These centres must have the necessary space inside for loading and unloading the vehicles.
- e) Storage and logistic activities not exceeding 1000 m2 of storage capacity per floor and 3000 m2 maximum ceiling. This limitation will be applied in general in the circumstances that such a use is the predominant one. The storage of dangerous products: flammable, explosive, toxic, corrosive, and waste is prohibited.  
The activities are not allowed to use transport vehicles of more than 8 tonnes. They must have the necessary interior space for loading and unloading.

Exclusive use as a deposit is prohibited.

**For industrial use in the permitted categories and situations, the dispositions on industrial uses contained in Section 2 Chapter 3 of the NU in the PGM will be applied, although power limits and number of workers will not be considered.**

**Offices.** Permitted under conditions established in art. 311.1 of the NU and in the actions regulated by art. 9,10,16 and 17.

**Residential.** Permitted, in accordance with section 2 of this article. Including activities listed in article 277 of the NU in the PGM. Within this use, buildings directly related to companies installed in the area that are destined as part time staff accommodation are admitted, providing these buildings are included in the intervention developed via a Urban Improvement Plan, under conditions provided by articles 16 and 17.

**Housing.** Permitted in the following cases:

- a) In all existing buildings currently used for housing. These are indicated on maps P3 and P4.  
Extension or renovation of these buildings will be possible under conditions established by art. 9.
- b) In the reuse of existing industrial buildings, under conditions regulated by article 10.
- c) **In transformation actions in those conditions defined in art. 16 and 17 with the limitation of** the additional complementary net index that these articles determine and notwithstanding that established by article 18 for the relocation of housing.

**Commercial.** Permitted, in accordance with section 2.

Commercial Centres and amenities established by Law 1/1997 of the 24th of March are not permitted. Included in this use are premises destined to offer public service, for general use or for companies. Food shops will be regulated in line with the provisions of the Special Plan for Commercial Food establishments (PECAB).

**Health.** Permitted, in accordance with section 2.

**Religious.** Permitted, in accordance with section 2.

**Cultural.** Permitted, in accordance with section 2.

**Leisure.** Permitted, with the limitations determined by the Special Plan for Public Attendance of the Sant Martí District, in accordance with section 2.

**Sport.** Permitted, in accordance with section 2.

**Technical, environmental and urban planning services.** Permitted. Includes those activities related to the development of public service networks and infrastructures. Including provisions of public parking spaces specified by the Urban Improvement Plan or by Special Plans.

**2.** Commercial, health, religious, cultural, leisure, sport and residential uses are permitted in the transformation actions provided for in art. 10, 16 and 17.

Those existing buildings not included in development are permitted, in accordance with art. 311.1 of the NU in the PGM.

In the existing buildings with street frontage, these uses are always permitted as long as they do not replace existing housing uses. Commercial use is permitted on the ground floor with no limitations. The Urban Improvement Plan of building fronts provided by article 9 will establish the regulations regarding use.

Commercial use is also permitted on the ground floor in housing without street frontage.

The construction of hotels and dwellings of public or social interest and places for health or sport uses can be developed by Urban Improvement Plan, under conditions provided in article 17.3.

**3.** Implemented activities must certify, in obedience of environmental legislation and municipal laws, that they do not produce negative effects on the environment and that they adopt the best available technology to minimise any risks that could be created.

In particular, they must draw up a report on the sustainability and energy savings of the building and the activity. The necessary measures will be adopted for the cleaning of contaminated land before implementing new activities.

#### **Art.7 @ Activities**

**1.** Activities defined as @ activities are particular to the 22@ area. Belonging to this denomination are emerging activities related to the new sector of information and communication technologies (ICT), as well as those which, independently of the economic sector they belong to, are related to research, design, publishing, culture, multimedia activities or database and knowledge management. Included in the concept of @ activities are those listed in appendix 1 of these Regulations, which may be developed within the uses of the zone, as well as those incorporated in the Urban Improvement Plans to meet the characteristics defined by these Regulations.

**2.** @ activities have the following characteristics:

- a) They use production processes characterised by the intensive use of new technology.
- b) They have a high occupational density available (number of workers or users/surface area).
- c) They generate high added value.
- d) They are directly related with the generation, processing and transmission of information and knowledge.
- e) They are non polluting, nor a nuisance, and can be developed in urban centres.

**3.** The Urban Improvement Plans provided for in articles 10,16 and 17 can update the list of activities defined as @, with the aim of adapting them over time and in a dynamic way, incorporating those activities that meet the requirements similar to those defined by this MPM.

4. The City Council will create an Advisory Commission, made up of professionals in the areas of ICT, information society and the economy of knowledge, designated by the Mayor of Barcelona. The aim and role of the Commission will be:

- a) To inform on those Urban Improvement Plans developing @ activities regarding the aspects proposed by them.
- b) To propose updating of the relation of @ activities as activities are incorporated into the business area.
- c) To interpret, in the case of doubt or error, whether an activity responds to the concept defined in sections 1 and 2.

The Decree of the constitution of the above-mentioned Commission will determine the composition of the same, and especially consider the participation of members from other institutions or administrations and the operational regulations.

## **Art. 8 General Building Regulations**

1. Building in the 22@ zone destined for industrial use and permitted by article 6 can be developed directly via license and will be adjusted to the building index per plot of 2.2 m<sup>2</sup> roof/m<sup>2</sup> land. The index of 0.2 m<sup>2</sup> roof/m<sup>2</sup> land which complements the general building index for the industrial area (2 m<sup>2</sup> roof/m<sup>2</sup> land), is established as compensation for the increase in urban development costs, related to the Special Infrastructure Plan. The conditions for building are the following:

- a) Buildings with street frontage. By approval of the corresponding detailed study, an isolated typology may be adopted when the pre-existing typologies so require.
- b) Maximum permitted height and number of storeys: 24 m for streets of 20 m wide or more with a limit of a ground floor plus four floors; 19.20 m for streets of between 11 m and 20 m, with a limit of a ground floor plus three floors; 14.40 m for streets of between 8 and 11 m, with a limit of a ground floor plus two floors; 9.60 m for streets of less than 8 m, with a limit of a ground floor and one floor. The regulation height will be applied according to the type of road alignment.
- c) Attics and any enclosed protruding sections are counted within the building index in all cases.
- d) The underground land may be occupied in its totality.
- e) Minimum plot size of 500 m<sup>2</sup>.
- f) Maximum occupancy of plot 70%
- g) Industrial buildings with more than one activity must have a common loading and unloading space and a single access to the parking lot.

2. In those actions being developed via Urban Improvement Plan, these will establish the building conditions subject to the building indices established by this MPGM. Uses permitted by article 6 in new buildings that are not developed through transformation action will be subject to the 2.2m<sup>2</sup> roof/m<sup>2</sup> land index.

3. Building conditions for intervention are specified by the Urban Improvement Plans in articles 10,16 and 17.

4. A building bylaw may be drawn up to specify the applicable building conditions.

5. In order that an area of land may benefit from being considered a plot, with the aim of carrying out its transformation, according to article 29 of the Revised Text of the Urban Planning Law, it must have the urban services referred to in article 19 of these Regulations.



6. Building façades are regulated by the determinations contained in the following article.

#### **Art. 9 Building regulations regarding existing buildings destined for housing**

1. Existing buildings destined for housing, classified as a 22@ zone, maintain their current building status and can carry out any type of work as long as it does not entail an increase in volume.

2. Buildings forming part of the street façade indicated on map 3 can increase their volume or renovate the building via Urban Improvement Plan, which will regulate the building conditions in accordance with the following rules:

- a) The range of the Urban Improvement Plan will include the whole frontage.
- b) The height of the building shall not exceed 20.75m corresponding to the ground floor plus five floors on 20 m streets, except in cases justified by the Urban Improvement Plan in order to adjust to preexisting buildings and homogenize the façade. For narrower streets article 327 of the NU will apply.
- c) The depth of the street frontage will be set as an average of the consolidated buildings (buildings  $\geq$  GF+3 and number of dwellings  $\geq$ 4) that form part of the frontage.
- d) Housing resulting from extension or renovation will come under some type of public protection regime.
- e) Uses other than housing will be accepted at a rate of 20 % maximum of the building front. This percentage cannot entail a reduction in the existing roof surface area currently destined for housing.
- f) The obligatory free concession is planned for developed land and will be destined for free spaces and public amenities with a surface area equal to the result of applying the standard of 31m<sup>2</sup> of land, from which a minimum of 18 m<sup>2</sup> will be reserved for free spaces, for each 100 m<sup>2</sup> of the new dwellings defined by the Urban Improvement Plan, which increases the number of existing dwellings at the moment of the MPGM's approval. The planned concession, in the case that it is not materialised inside the scope of the plan, may be effected outside of it or substituted for its economic equivalent, which will be destined by the acting administration to the acquisition of foreseen systems. In actions destined exclusively to protected public housing, the specific protection regime will be taken into account for the calculation of economic contribution, in order to guarantee a fair distribution of charges and benefits.
- g) The building index for street frontage cannot be transferred outside these areas.
- h) The Urban Improvement Plan will specify the rate of 10% concession, in accordance with article 43 of the Revised Text of the Urban Planning Law.

#### **Art.10. Reuse of existing industrial buildings**

**A.**

1. The existing industrial buildings situated on land denominated 22@ outside transformation areas which do not conform with the MPGM may be the object of

actions provided for by article 102 of the Legal Decree 1/2005, of the 26th of July, by which the Revised Text of the Urban Planning Law was approved, installing there new uses in accordance with that foreseen by art. 6.

**2.** Consolidated industrial buildings, due to roof surface area or uses, may be excluded from the global intervention, prior their justification by the plan. A building is considered consolidated when it exceeds the building index of 2.7m<sup>2</sup> roof/m<sup>2</sup> land of the plot.

Consolidated uses, regarding the possible exclusion from an area of transformation, are those activities whose substitution, in terms of the planning range, makes the transformation action unfeasible or extraordinarily difficult, given their characteristics, transfer costs or social-economic impact.

**3.** Reuse of these buildings by the implementation of new permitted uses in the transformation, and especially @ activities that entail a global rehabilitation, reform or restructuring, requires the formulation of the corresponding Urban Improvement Plan.

The execution of high grade rehabilitation with a cost of 50% or higher of the value of the construction of a new floor of similar characteristics and with the same surface area as the existing building, are considered as included in the above supposition.

The Urban Improvement Plan will specify the urban planning charges, including action and use characteristics, taking as reference the materialised benefit. The corresponding urban planning agreements can be granted with this aim in mind.

**4.** The Urban Improvement Plans will have the degree of specification of an integrated Special Plan as far as the intervention on industrial buildings is concerned, and will be adjusted to the following conditions:

- a) The Architect's draft project justifying the suitability of the building for the new use will be included with the documentation of the Urban Improvement Plan.
- b) If necessary, adjustments to the volume of the building for its appropriate insertion in the environment must be specified.

## **B.**

**1.** With the aim incentivising the preservation of architectural industrial heritage and to allow for a non-conventional range of housing types, rehabilitation and/or reform actions on existing industrial buildings destined for reuse as housing may be authorised with the following conditions:

- a) Only buildings that do not exceed the building index of 2.2 m<sup>2</sup> roof/m<sup>2</sup> land on the plot will be permitted, notwithstanding the provisions of paragraph d).
- b) It will be necessary to formulate the corresponding Urban Improvement Plan, which will be a integral Special Plan in nature, with the degree of specification as laid out in the preceding section 4.
- c) The Urban Improvement Plan will establish a reserve for free spaces and amenities at a proportion of 31 m<sup>2</sup> per 100 m<sup>2</sup> of housing roof surface area, of which 18 m<sup>2</sup> minimum will be destined to free spaces. Land with this destination will be conceded compulsorily and free of charge. Concessions may be carried out in the area itself or in non-contiguous transformation areas.
- d) The addition of volumes corresponding to elements necessary for the development of new uses such as stairs, lifts, technical elements of communal installations and general services is permitted.

2. These actions, when located in transformation action areas, do not count for the housing roof surface area specified by articles 16 and 17. In this case, the Urban Improvement Plans shall incorporate the necessary determinations, with the same degree of specification as section A.4.

3. Buildings described in appendix 2 are considered reusable as housing and of architectural value due to their external characteristics, notwithstanding the intervention in the integrated Special Plan. This list has no limiting character, although new incorporations proposed must be justified by their adaptation to the characteristics listed below, and must be informed by the Technical Commission defined in article 3.4:

- Industrial buildings that, due to their architectural, historical or artistic interest, are representative of the different stages of industrial development in Poblenou.
- Those buildings that, due to their typology, are qualified to accommodate their use as housing without ruining the characteristics that constitute their interest.
- Those buildings that, due to their characteristics and structural quality, may be the object of a rehabilitation operation.
- Those buildings that are located in an environment where there are no industries or activities incompatible with use as housing.

## **CHAPTER 3. REGULATION OF SYSTEMS**

### **Art. 11. Regulation of systems**

1. Land destined for systems are regulated by the determinations of the Urban Planning Regulations of the PGM and by what is established in this chapter.

2. Land which the MPGM classifies as 22@ and that which the development planning, in compliance with concession standards, reclassifies for amenities, including the key 7@ classification, and green areas, by way of concession, maintain the benefit assigned by this Municipal Plan. This must be relocated on the corresponding building land.

### **Art. 12. 7@ amenities. Definition**

This classification corresponds to land which may be destined, in addition to the amenities stated in art. 212 of the NU, to amenities related to the training and divulgation of @ activities, in accordance with the Special Urban Plan under which they are developed.

The 7@ amenities provided for directly by this MPGM are defined in map P.2. The Urban Improvement Plans and the Special Plans will likewise be able to designate land with this classification.

### **Art. 13. Destination of 7@ amenities**

The functional programme of amenities classified as 7@ may incorporate the following uses:

- a) On-going training carried out in the same amenities and accredited by an authorised training centre.
- b) Activities promoting new technologies.
- c) Private production activities related to training in the fields of communication and knowledge technologies (ICT) up to a maximum of the third of the total roof surface area of the amenities. They will be developed as concessions, maintaining public ownership of the amenities.

#### **Art. 14 Development of 7@ amenities**

1. 7@ amenities will be developed via Special Urban Plans, which will specify their destination, ordinance conditions and building intensity. The Special Plans shall include the documentation that accredits the relation to the training action and the participation of private activities developed in relation to the facility.

2. The City Council will establish the programmes of co-operation with Universities or other authorised training centres and companies for the development of these amenities.

3. Public ownership of the amenities is maintained in accordance with current planning regulations.

### **CHAPTER 4. DEVELOPMENT OF THE MPGM**

#### **Art. 15. Plans for development**

1. The MPGM will be developed via the following derived plans:

- a) Urban Improvement Plans for the area established in the MPGM (art.16).
- b) Urban Improvement Plans for areas not expressly established, in order to develop transformation actions (art. 17).
- c) Urban Improvement Plans for building façades described in map 3 (art. 9)
- d) Urban Improvement Plans and Integral Plans to carry out isolated interventions in industrial buildings (art. 10).
- e) Urban Improvement Plans for the development of hotels, @ activities and provisional uses not integrated in transformation activities (17.3)

2. Amenities will be developed via Special Urban Plan as per articles 215 and 217 of the NU.

3. The specification of the infrastructure and urban services in the area requires the preparation of a Special Infrastructure Plan to regulate the necessary determinations on the underground land (art. 19) and to define and systemise adequately the elements that make up the local systems of free spaces and green areas.

**Art. 16. Urban Improvement Plans for the development of transformation actions in the areas established by the MPGM (predetermined actions)**

1. This MPGM determines specific derived planning areas with the object of creating new elements of urban structure and enabling the development strategic actions of urban transformation that will allow to create a new dynamic in the sector, with the objectives described in this Report.

2. The description of these areas is indicated on map number 2 of the current Modification and are the following:

- a) Llacuna.
- b) Parc Central.
- c) Campus Audiovisual.
- d) Llull-Pujades (Llevant).
- e) Llull-Pujades (Ponent).
- f) Perú-Pere IV.

3. The development of these planning areas will be carried out by Urban Improvement Plans of public initiative, which will specify the range of the transformation action. Owners may substitute the City Council in the promotion of the Plans two years after the approval of the MPGM without these having been approved initially.

4. The Urban Improvement Plans will define the ordinance subject to the following parameters and conditions:

**a)** Suitability for building: is determined by the following net building indices applied on a surface area classified by the MPGM as a 22@ area of activity.

Net index: 2.2m<sup>2</sup> roof/m<sup>2</sup> land. The index of 0,2 m<sup>2</sup> roof/m<sup>2</sup> land which complements the general building index of industrial areas (2m<sup>2</sup> roof/m<sup>2</sup> land) is established as a compensation for the increase in urban planning costs related to the Special Infrastructure Plan.

Complementary net index: 0,5 m<sup>2</sup> roof/m<sup>2</sup> land. May be added to the net index destined exclusively to @ activities. Use of the complimentary building index will be conditioned by the identification, fulfilment and guaranteed continuity in the document of the Urban Improvement Plan of the business initiatives related to the @ activity.

Additional complementary net index: 0,3 m<sup>2</sup> roof/m<sup>2</sup> land of municipal ownership will be destined for housing under some type of public protection regime.

In these defined transformation areas, the complementary index is increased by 0.2m<sup>2</sup> roof/m<sup>2</sup> land, also of municipal ownership, to complete parking reserves, attend the to the requirements of the technical services required by the sector, or use for housing under some type of public protection regime.

25% of the roof surface area destined for housing will be for rent.

It is compulsory to execute the roof surface area resulting from the application of the additional complementary net index and its increase when developing the transformation action. The concession of land corresponding to this building suitability may be object of an agreement with the City Council.

**b)** Uses: The Urban Improvement Plan will carry out and regulate in detail the uses permitted and the activities to be developed within the transformation areas, among

those provided in general by article 6. Likewise, it will be necessary to plan for the termination of those uses not permitted by the same article 6, being incompatible with the proposed urban environment.

**c) Concessions for systems:** The Urban Improvement Plan will incorporate, as a specific charge, the concession of land equivalent to 10% of that of the action, destined to amenities.

The Urban Improvement Plan must provide for the concession for local systems of free spaces and amenities, developed with a minimum quantity of 31m<sup>2</sup> of land for each 100 m<sup>2</sup> of roof surface area of housing, of which 18 m<sup>2</sup> minimum will be destined for free spaces. Land with this destination will be of free and compulsory concession.

Concessions provided for in this section must be guaranteed in the same area, or in non-contiguous transformation areas on land which the corresponding Urban Improvement Plan will classify with this destination.

When the area of transformation includes streets to be opened, the land with this destination will also be of free and compulsory concession.

#### **d) Housing density**

The transformation action shall not exceed the maximum density resulting from dividing the roof surface area destined for housing by 80 m<sup>2</sup>, with the exception of those promotions that are under some specific public protection regime with a lower protected surface area. In this case, density will be adjusted according to this surface area.

#### **e) Urban planning conditions and services**

The Urban Improvement Plan will specify the urban planning conditions and the communal and individual services to be located in the private area, in accordance with the Special Infrastructure Plan provided by article 19.

#### **f) Urban planning agreements**

The urban planning agreements form part of the Urban Improvement Plan and specify the conditions established in this article.

#### **g) Terms of building**

The Urban Improvement Plan will determine the terms of building.

#### **h) Concessions of land corresponding to 10% of usage**

The Urban Improvement Plan will classify land corresponding to the additional complementary index defined in section a). The land classified for housing in a public protection regime is included in the 10% concession of land usage

**5.** The building specification provided in this MPGM for the areas of transformation and other areas developed by Urban Improvement Plan, is conditioned by the accreditation, if necessary, of the corresponding urban agreement, the compliance with the principles of participation of the community in the added value generated by the planning and the

balance between charges and profit, with the legal duties of concession and urban planning, in accordance with Legislative Decree 1/2005 of the 26 July, by which the Revised Text of the Urban Planning Law was approved.

The City Council will destine to the Municipal Urban Heritage, provided in article 74 of the Charter of Barcelona, the resulting concessions or the monetary equivalent that is contributed when considered as such by the urban planning instruments.

#### **Art. 17. Urban Improvement Plans for the development of non-demarcated transformation actions**

1. These actions are permitted and it is planned to promote the development of global intervention undefined by the current Modification, via the corresponding Urban Improvement Plans with the objectives indicated in this report and on the conditions established by the previous chapter.

The additional complementary building index will be 0.3m<sup>2</sup> roof/m<sup>2</sup> land without the increase provided for in the previous article.

The range of the Urban Improvement Plans must be justified properly and will include an Eixample-type block or part of this defined by a "passatge", as a minimum.

2. The minimum area of transformation action, regarding the application of the regulations provided in this article, is 60% of the range of the planning.

Excluded from this percentage are the areas of building fronts, consolidated industrial buildings which meet the requirements defined by article 10, as long as these buildings do not include uses not permitted by article 6, incompatible with the proposed urban environment, as well as already transformed areas. In the case of an area greater than one block, or other duly justified exceptional cases, it will be necessary to demonstrate that the areas not incorporated, due to their size and nature, can develop transformation actions.

Private promotion Plans may be presented by owners with a minimum surface area of 60% of the land in the proposed development area. In the case of blocks defined by "passatges", they must have 80% of the land.

3. With the aim of advancing the objectives of the intervention of a block, the formulation of Urban Improvement Plans for the development of new hotels, @ activities and uses considered in article 6.2, is accepted with the following conditions:

- a) The action covers a minimum plot size of 2,000 m<sup>2</sup>, with the exception of the implementation of service provision uses.
- b) Immediate construction and completion in the term of two years from the granting of the license are guaranteed.
- c) It is destined to an @ activity, hotel or a service provision use and the building project and the installation of the activity is presented jointly with the Plan.
- d) The building index is adjusted to 2.2m<sup>2</sup> roof/m<sup>2</sup> land.
- e) Costing for the urban development is guaranteed.
- f) There is an undertaking that the transformation action of the block will not be impeded and the commitments and guarantees to ensure the concession duties are also established. The concession of land and its corresponding use will be made effective, if suitable, in accordance with article 43.3 and will be taken into

consideration as compensation, if it proceeds, when the transformation of the block is developed.

4. The Urban Improvement Plans will define the management mechanisms that will allow the execution of the planning proposals. When a building is excluded from the transformation operation, in accordance with section 2, neither the occupied land nor the materialised building will be taken into account in the transformation action.

#### **Art. 18. Housing in transformation areas**

Actions that include existing housing within their ambit, and which the Urban Improvement Plan proposes to transform, should plan for the relocation of their residents in accordance with article 114 of the Revised Text of the Urban Planning Law. The building index necessary to carry out this action may be allocated to the 2.2m<sup>2</sup> roof/m<sup>2</sup> land index.

The building index destined to these effects, when the existing housing forms a building front as indicated in map 3, will be that derived from the building conditions established in article 9.

Relocation of existing housing, motivated by its inclusion in the transformation actions or renovation of building façades will take place in housing under a public protection regime. It may be carried out in free housing, taking into consideration the income conditions of the occupants who have the right to be rehoused.

#### **Art. 19. Special Infrastructure Plan.**

1. In accordance with article 29 del Revised Text of the Urban Planning Law and article 65.2 of the Barcelona Charter the following services are established as an urban planning standard of the sector which will form part of the urban planning charges:

- road surfacing
- gardening
- electricity distribution network
- sewage network and collectors
- gas network
- rubbish collection network and fixed elements
- fibre optic network
- drinking water network
- non-drinking water network, with the exploitation of phreatic water for watering, fire control and air conditioning.
- telephone and telecommunications network
- local service galleries or public ownership gallery network.
- waste network
- urban furniture
- public lighting
- signage

2. Barcelona City Council will create a Special Infrastructure Plan that will define and specify the standards of the above-mentioned urban services and the characteristics of other infrastructures and necessary services for both public and private land. This



Special Plan must take into consideration the following criteria:

- Control of level of noise pollution
- Preferred use of renewable energy sources
- Preference of public transport
- Energy savings

3. The Special Infrastructure Plan will define the main elements of the following infrastructures and services:

- a) Infrastructures for the internal mobility of the sector and its connection with the rest of the city.

To be provided in public space:

- Street system (roads, pavements, gardens), with the sections and other characteristics as determined
- Fixed public land transport infrastructure as necessary for the sector
- Integrated, intelligent traffic management system (support management systems, informative screens, geographical location systems)
- Lighting installations
- Parking for different types of vehicles (cars, bicycles, etc.) managed in an integral way and with information systems.
- Support for other alternative transport systems (bicycles, electric transport within the sector, etc..)

To be provided in the internal spaces of private developments in the transformation actions:

- Parking of vehicles and all private transport elements of the sector
- Management system for unloading goods in the whole sector (bays for the blocks, underground bays, centralised unloading and retail distribution, etc)

- b) Infrastructures related to energy systems, whose design must take into account the criteria of guaranteed supply, flexibility and sustainability:

To be provided in public space:

- Services galleries or channel network for the electricity network for the sector, with the possibility of establishing redundancy systems and flexible exploitation for the time when competition enters the sector
- Heating and cooling network. Cold and hot water channelling system to centralise air conditioning systems, avoiding individual installations.
- Gas network

To be provided in the internal spaces of private developments in the transformation actions:

- Electricity substations and network facilities of all types.
  - Elements generating renewable energy (solar, photovoltaic) and the facilities necessary to introduce the energy produced into the network.
- c) Communications infrastructures. Designed by taking into account the existence of multiple operators with possibilities of offering services in the sector.

To be provided in public space:

- Service galleries and conduits, so that those operators who wish to may lay out their own network.
- Capacity for setting out a network of “dark fibre” with access to each city block, available to the different operators so that they can freely offer connection services to the sector.

To be provided in the internal spaces of private developments in the transformation actions:

- Spaces for locating telecommunication equipment with a capacity for rendering services to the whole block.
- A single centralised structure, for each city block, to support mobile and radio communications.
- Interior cable in the buildings and availability of passage conduits through communal areas.

**d) Infrastructures relating to the hydraulic network.**

To be provided in public space:

- Drinking water supply network connected to the general city network.
- Non-drinking water supply system destined for uses apart from human consumption, with collection systems derived from the phreatic levels of the sector.
- Collector networks for sewage and wastewater, and transport to the treatment and purification system

To be provided in the internal spaces of private developments in the transformation actions:

- Collection and metering points for water.

**e) Infrastructures linked to selective waste collection and recuperation**

To be provided in public space:

- Conduits for pneumatic waste collection
- Waste collection and treatment centre(s)
- Waste disposal area(s).

To be provided in the internal spaces of private developments in the transformation actions:

- Access points to the pneumatic waste collection network from the communal areas of the buildings.
- Specific waste collection bays in the event of waste producing establishments.

**f) Uses planned for in the public and private underground land areas of the sector**

**4.** The determinations of the Special Infrastructure Plan that affect privately owned spaces will be specified in the constitution of the corresponding rights at the time of

granting the building licenses and shall be recorded in the property registry at the time of registering the declarations of new works and of the constituting documents for the owners' community.

## **CHAPTER 5. EXECUTION OF THE PLANNING**

### **Art. 20. Obligations concerning urban development costs**

1. The costs incurred in providing infrastructures in the district, in accordance with the foreseen planning arrangements, will be charged to the owners of the land. The building fronts defined in article 9 will contribute when they develop the mandatory improvement plan. Investments made by the Authorities to implement services and infrastructures in the district will be considered as expenses paid in advance for the execution of the planning and will be passed on to the owners in the district.
2. Isolated building projects should also pay the quota of the planning charges due to them according to the expressed urban planning standards.
3. The Special Infrastructure Plan may define the limits for action as required to ensure the fair distribution of the urban planning charges and will establish criteria for their enforcement. It may also foresee payment of the urban planning costs through the concession of land or use.
4. The Special Infrastructure Plan will determine the appropriate agreements with companies and suppliers and those in charge of the services, with regard to defining the charges directly imputable to the owners in the district, in order to prevent these charges having to be paid in advance.

### **Art. 21. Obligations of owners in isolated projects**

1. In isolated projects, the owners will have the following obligations:
  - a) Concession of the land for making roads affecting the plot.
  - b) Urban planning and development costs.
  - c) Free concession of land corresponding to 10% of the urban planning usage, in accordance with article 43 of the Revised Text of the Urban Planning Law.
2. Included in this section are urban improvement actions carried out on specific plots of land that Regulations allow to be developed via Plan with the maximum building index of 2.2m<sup>2</sup> roof/ m<sup>2</sup> land. When they are incorporated in transformation projects, then the remaining building index according to the regulations indicated in the following Article will be applicable.

### **Art. 22. Obligations of owners in transformation projects**

1. In the transformation actions to be developed by the Urban Improvement Plan (arts. 10, 16 and 17) the owners will have the following obligations:
  - a) Concession of the land for the roads included in the project
  - b) Concession of an area of land equivalent to 10% of the scope of the project, destined to community amenities.

- c) Concession of land resulting from applying a standard of 31 m<sup>2</sup> of land for each 100 m<sup>2</sup> used for housing, a minimum of 18 m<sup>2</sup> of which will be used for free spaces.
- d) Urban planning and development costs
- e) Relocation of the occupants of the housing to be transformed and assuming the costs incurred in the elimination of unaccepted uses and termination of uses and activities that are not allowed to continue within the scope of said transformation.
- f) Free concession of land corresponding to 10% of the urban planning usage, in accordance with article 43 of the Revised Text of the Urban Planning Law.

2. The Urban Improvement Plans will define the necessary action units for a fair distribution of benefit and charges. These may be non-contiguous.

### **Art. 23. Payment of urban development costs**

In the execution of the development, owners of industrial buildings that are not subject to transformation projects may substitute payment of urban development charges derived from execution of the Special Infrastructure Plan, as laid out in Article 19 of these Regulations, for transfer of benefit, applying an index of 0.2m<sup>2</sup> roof/m<sup>2</sup> land to the Municipal Planning Trust, in accordance with to the provisions of Articles 73.2 and 74 of the Charter of Barcelona.

## **ADDITIONAL RESOLUTION**

### **FIRST**

1. The land included in action units 4 and 11 of the Special Internal Reform Plan Diagonal-Poblenou, incorporated in this MPGM, will have the benefit conditions defined for sub-zone 22@ and transformation projects, considering the block as a whole, irrespective of their category determined in the PERI.

2. The Urban Improvement Plans may adjust the categories defined in the MPGM and PERI Diagonal Poblenou in due course, following the specific steps stipulated in article 66.5 of the Charter of Barcelona, maintaining the global areas of the systems and obligations of concessions, notwithstanding the obligations derived from this MPGM with regard to urban planning and development and the concession of additional free areas resulting from the increase corresponding to housing.

3. The scope corresponding to project unit 11 of the PERI Diagonal-Poblenou, whose Compensation Commission has already been set up, is defined as the scope of transformation that can be promoted at the initiative of the owners therein. They should present the appropriate Urban Improvement Plan within a maximum of six months from the date the MPGM comes in force. Once this period has elapsed, the public development initiative may replace the private one.

4. The attached regulation details specify the conditions of use of these scopes.

### **SECOND**

The obligations foreseen in articles 9, 21 and 22 are directly applicable to the derived plans – special interior remodel plans, urban improvement plans and special plans– approved and in process, when this modification comes into force, corresponding to the

scope of the Modification of the General Metropolitan Plan for the renovation of the industrial areas of Poblenou, and the management developing them.

## **TRANSITORY RESOLUTIONS**

**FIRST.** The buildings and uses currently on land of category 22@ that have a municipal licence and are not permitted according to the new regulation are considered non-compliant, without detriment to the rulings that may be established in the Special Plans for transformation projects

**SECOND.** While the transitory situation is still in force, the authorisation of any different industrial use will require justification before situations of incompatibility arise with regard to the industries legally established in their surroundings.

**THIRD.** The regime of Establishments Open to the Public will be defined in the Special Plan to be drawn up within a period of one year with regard to the District of Sant Martí. It will specify the conditions for installation and the limitations of said activities, in particular with regard to housing. Until this is in force, no music establishment or any of those defined as “F” in the Regulations on Establishments Open to the Public will be allowed to set up in the area defined in the attached map.

The Special Plan should define restrictions in the installation of new discotheques, music bars and similar in the area where most of these activities are currently installed. In addition, it will establish a regime of distances between these establishments, taking a distance of 400 m. as the reference, in order to ensure a balanced distribution in their location.

**FOURTH.** Until the Special Internal Reform Plans for the defined transformation areas are approved and published, current uses and buildings will be respected, authorising works for the consolidation, conservation, repair and modernisation of the safety and environment conditions, as well as those tending to eliminate or reduce disturbing, harmful, unhealthy or dangerous aspects of industrial installations. New constructions will not be authorised.

In this sense, Special Plans may be presented, independently, for the re-use of consolidated industrial buildings, in accordance with Article 10.A.

As to buildings or installations located on land in this category, the above-mentioned works will be authorised with the exception of consolidation tasks.

This regime will apply to all the defined areas of transformation unless Special Plans were to foresee any different, duly justified transitory rulings.

## REGULATION DETAILS OF THE ADDITIONAL RESOLUTION

### PROJECT UNIT PU-4

**Total area PU:** 51,921 m<sup>2</sup>

**Land category:**

22@	18,216 m <sup>2</sup>
7b	5,745 m <sup>2</sup>
7@	7,669 m <sup>2</sup>
6b	5,760 m <sup>2</sup>
5	14,531 m <sup>2</sup>

**Area of land for the application of net indices (Art. 16.4): 37,390 m<sup>2</sup>**

**Area suitable for construction, by applying net indices (art. 16.4):**

Net index 2.20 m <sup>2</sup> roof/m <sup>2</sup> land:	82,258 m <sup>2</sup>	Uses - Article 6.
Complementary net index 0.50 m <sup>2</sup> roof/m <sup>2</sup> land:	18,695 m <sup>2</sup>	@ activities only

Add. complementary net index 0.30 m<sup>2</sup> roof/m<sup>2</sup> land: 11,217 m<sup>2</sup>.

Compulsory, destined exclusively to housing subject to some kind of public protection regime.

Increased additional index 0.20 m<sup>2</sup> roof/m<sup>2</sup> land: 7,478 m<sup>2</sup>.

Compulsory, destined to housing subject to some kind of public protection regime, parking or technical services.

**Maximum area for building: 119,648 m<sup>2</sup>.**

**Obligations of owners:**

1. Land to be conceded compulsorily and free of charge:
  - Roads: 14,531 m<sup>2</sup>
  - Green areas: 5,760 m<sup>2</sup>
  - Amenities: 13,414 m<sup>2</sup>
  - Standard of free areas and amenities associated with housing: 31 m<sup>2</sup>/inhab
2. Other concessions resulting from Article 16 sections 4 and 5.
3. Urban development costs: estimated cost - 450 million pesetas.
4. Relocation of occupants of housing to be transformed and assuming the costs incurred from eliminating uses and activities due to cease within the scope of the transformation.

**Development:**

Within the framework of the Special Plan for the transformation project: "Campus Audiovisual".

## PROJECT UNIT PU-11

**Total area PU: 46.485 m<sup>2</sup>**

### Land category:

22@	13,698 m <sup>2</sup>
13d	698 m <sup>2</sup>
7b	4,471 m <sup>2</sup>
6b	5,999 m <sup>2</sup>
5	21,619 m <sup>2</sup>

**Area of land for the application of net indices (Art. 16.4): 24.168 m<sup>2</sup>**

### Area suitable for construction, by applying net indices (art.16.4):

Net index 2.20 m<sup>2</sup> roof/m<sup>2</sup> land: 53,169 m<sup>2</sup>.

Uses - Article 6.

Net complementary index 0.50 m<sup>2</sup> roof/m<sup>2</sup> land: 12.084 m<sup>2</sup>. Exclusively @ activities

Add. complementary net index 0.30 m<sup>2</sup> roof/m<sup>2</sup> land: 7,250 m<sup>2</sup>.

Compulsory, destined exclusively to housing subject to some kind of public protection regime.

Land surface area 13d: 4,188 m<sup>2</sup>.

**Maximum area for building: 76.691 m<sup>2</sup>.**

### Obligations of owners:

1. Land to be conceded compulsorily and free of charge:

-Roads:	21.619 m <sup>2</sup>
-Green areas:	5.999 m <sup>2</sup>
-Amenities:	4.471 m <sup>2</sup>
-Standard of free areas and amenities associated with housing:	31 m <sup>2</sup> /inhab

2. Other concessions resulting from Article 16 sections 4 and 5.

3. Urban development costs: estimated cost - 440 million pesetas.

4. Relocation of occupants of housing to be transformed and assuming the costs incurred from the suppression of uses and activities due to cease within the scope of the transformation.

### Development:

Special Plan.

## **APPENDIX 1: LIST OF PERMITTED ACTIVITIES**

---

**THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF  
THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

**AMALGAMATED TEXT**



## APPENDIX 1. LIST OF @ ACTIVITIES

### ICT

---

- Manufacture of computers and other data processing equipment:
  - Manufacture of machines for automatic data processing, including micro-computers.
  - Manufacture of peripheral units – printers, terminals, magnetic and optical readers, etc.
  - Installation of computers and data processing equipment.
- Manufacture of data processing consumables
- Manufacture of telecommunications systems (telephone switchboards, network control systems, mobile communication systems, communications via satellite systems).
- Manufacture of telecommunication equipment (terminals and appliances).
- Manufacture of telecommunications cables (copper, optical fibre).
- Manufacture of electronic material; Manufacture of radio, television and communications equipment and sets.
  - Manufacture of valves, tubes and other electronic components.
  - Manufacture of radio and television transmitters, appliances for radiotelephony and wired radiotelegraphy.
  - Manufacture of appliances for the reception, recording and reproduction of sound and image.
- Reproduction of recording supports:
  - Reproduction of sound recording supports - discs, compact discs, etc.
  - Reproduction of video recording supports - discs, compact discs, films, DVD, etc.
  - Reproduction of data recording supports - programs and data.
- Development, production, supply, treatment and documentation of computer programs.
  - Production of standard software – operating systems, applications.
  - Manufacture of advanced software related to knowledge, operation and storage of data and neural networks.
  - Manufacture of network-specific software - Intranet/Internet/Extranet, development of e-commerce applications, security and certificates, financial services.
  - Manufacture of specialised software for specific applications.
- Manufacture of management and control software and intelligent applications for telecommunications networks
- Radio broadcasting and telecommunications:
  - Radio activities: Manufacture and/or broadcasting of programmes.
  - Production, distribution and/or broadcasting of television programmes.
  - Telecommunications by cable and radiophone companies. Transmission of sound, image, data or other information by cable and waves, by booster or satellite.
  - Communications by telephone, telegraphy and telex.
  - Transmission of radio and television programmes.
  - Added value telephony services: audiotex, etc.
  - Network maintenance.
- Development of transmission by cable.
- Internet sector:
  - Internet access.

- Web hosting.
- Web development.
- Web promotion and marketing.
- Internet advertising.
- E-commerce.
- Other services related to the Internet.
- Multimedia sector:
  - Interactive television.
  - Off-line: CD-ROM, DVD, photograph or film correction, virtual reality.
- Publishing sector: publications on paper (Newspapers, magazines).
- Audiovisual sector.

## SERVICES

---

- Data processing:
  - Process and treatment of client-supplied data.
  - Complete data processing
  - Data entering, recording, optical reading services, etc.
  - Management and use of data processing installations.
- E-mail related activities.
- Database related activities:
  - Creation of databases.
  - Data storage: preparation of a computerised registration model
  - Database consulting services.
- Rendering added value services (e-mail, electronic data exchange -EDI, electronic fund transfer – EFT, videoconferencing).
- Digital supply of goods and services.
- Maintenance and repair of computer equipment: rendering technical services - hot-lines, support, maintenance, outsourcing, after-sales services
- Other telecommunications services: all activities associated with mobile telephony, communications by satellite and their application to other sectors such as transport and distribution.
- Services for the creation of new companies:
  - Project assessment. Feasibility studies.
  - Business management courses
  - Technical assistance (acquisition of technology, technical information)
  - Financial assistance (assistance to new companies, “seed capital” or “pre-venture capital”).
  - Business Innovation Centres.
  - Science or Technology Parks
- Other tertiary activities based on knowledge to improve competitiveness according to the *Tableau de bord de l'OCDE, de la Science, de la Technologie et de l'Industrie 1999: “Mesurer les économies fondées sur le savoir” Paris 1999, page. 18*, and, in particular:
  - Technology area:
    - Demo centres for new technologies (TIC, CAD-CAM, and robotics).

- Technology Information databases.
- Test Laboratory.
- Technical Standards Centres.
- Design Centres.
- Technology assessment (technological audits).
- Technology transfer, seeking foreign companies for establishing links.
- Commercial area:
  - Exports.
  - Advertising.
  - Marketing.
  - Seeking distributors abroad.
- Financial area:
  - Auditing, accounting, leasing, factoring.
  - Risk capital.
  - Tax counselling.
- Administrative area:
  - Legal services.
  - Telecommunications.
  - Data processing services.
  - Translation services.
- Personnel area:
  - Technical training courses in general.

## **KNOWLEDGE CENTRES**

---

- Higher Training Centres (professional training, academies, etc.).
- Universities and On-going Training Centres
- Research Centres (R+D, public or private).
- Cultural amenities (museums, libraries, etc.)
- Professional Associations.
- Information, Documentation and Counselling Centres.
- Publishing houses and audiovisual creation companies.
- Companies using intensive knowledge bases.
- Artistic or cultural management activities

**\*\*** Special consideration will be given to activities associated with the information and communication technologies list drawn up by the Ministry of Industry.

## **APPENDIX 2: INDUSTRIAL BUILDINGS TO BE RE-USED FOR HOUSING**

---

**THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF  
THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

AMALGAMATED TEXT

## **ECONOMIC AND FINANCIAL STUDY**

---

### **THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

AMALGAMATED TEXT

## INDEX

---

1. JUSTIFICATION, CONTENT AND OBJECTIVES OF THE ECONOMIC AND FINANCIAL STUDY OF THE MODIFICATION TO THE GENERAL PLAN.
2. DIMENSIONS OF THE LAND AND AREA RESULTING FROM THE URBAN PLANNING AND STAGES PLAN.
3. DEMAND FOR SPACE FOR ACTIVITIES IN BARCELONA AND POBLE NOU.
4. ECONOMIC FEASIBILITY OF URBAN DEVELOPMENT EXPENSES.
5. ESTIMATION OF REAL ESTATE VIABILITY OF THE INTERVENTION (SPECIAL PLANS).

## **1. JUSTIFICATION, CONTENT AND OBJECTIVES OF THE ECONOMIC AND FINANCIAL STUDY OF THE MODIFICATION TO THE GENERAL METROPOLITAN PLAN (MPGM)**

The main objective of this Economic and Financial Study is to guarantee the implementation of the proposed urban development by justifying that the distribution of charges and profits is viable and adapted to the resolutions determined in the urban planning regulations and the situation of the real estate market. Its aim, in particular, is to emphasise that by taking advantage of the different “zones” at the current and future real estate market value, including investment from the public and other sources, the “systems” (infrastructures, indemnification, urban development and provisions of a collective nature) required for the development of the area can effectively be financed.

The main objective of the MPGM is the renovation of the industrial land in Poble Nou in order to enable urban transformation. The creation of a modern district of productive activities with infrastructures and associated development will be capable of satisfying the demands of business, with a significant presence of emerging economic activities from the new information and communication technologies sector (ICT), research, culture and knowledge. The economic benefits of these operations are the main justification for the viability of the urban planning actions proposed.

The content of the Economic and Financial Study of the modification to the General Plan complies with the resolutions of the Urban Planning Regulations regarding the content and functions of the Economic and Financial Study, in particular those resolutions concerning the rulings of the Bill of Revision to urban planning legislation of 1990. This bill determined (article 123, section 4t) that economic and financial studies of the Plans will justify “the resolutions adopted concerning the means of obtaining the system and, in the case of compulsory expropriation, the predicted investment from the local authorities or other competent bodies throughout the time the development is planned”.

In general, therefore, the Economic and Financial Study ensures the effective execution of the urban transformation proposals in their entirety. Also, from the point of view of management, it specifies the means of executing the systems to be carried out, including the scope of the development, the costs, agents or operators and the schedule for said execution on which its maintenance will depend. Despite that, this document will require revision after the final specification of the Special Infrastructure Plan, which will determine the actions, investments in each type of infrastructure and their financing.

From an economic viewpoint, the urban development tasks can be justified from two different standpoints:

1. The capacity of the real estate product and public sector for financing the urban development and construction costs derived from the urban planning, over a given period of time and according to the situation of the real estate market.
2. Their effect on the product, available income and occupation, over different time spans and territorial scopes.

The first target is that of the most urban-related content because it has to justify the development of the real estate operation and the quantity and quality of development and construction, as provided for in the urban planning provisions. The other approach situates the urban operation in a different context, which is not the object of study in this document.

The real estate prices are the most important point of reference in the economic viability of the costs of the urban development. The analysis of the real estate prices, past and

present, has been carried out for the municipality of Barcelona and, most specifically, for the Poble Nou area.

Basically, this economic study follows the economic and urban viability method put forth for the operations of INCASOL (The Catalan Institute of Land Management), according to the book "La pràctica de la gestió urbanística"<sup>1</sup>.

The conditions required for a general planning to be effective are as follows (op. cit. page. 25):

- ...appropriate dimensioning
- ...programming coherent in time
- ...definition of the fields of action under public and private initiative
- ...appropriate degree of specification
- ...the planning should not be excessively rigid
- ...it should be adapted to the human and economic resources of the authorities that have to manage the project"

The "urban differential" concept, one of the features of the sectors, is that benefits should be generated. The procurement of profit is totally conditioned and defined by the General Planning<sup>2</sup>, as this is what establishes rights and obligations, or, said another way, the charges and profits of the owners of the land. If there are no benefits, the planning of the sector would be condemned to failure as private initiative would not participate due to obvious reasons and public initiative would only arise in specific occasions when there was a marked community interest (op. cit., page 46).

"...How can it be determined whether or not a district is profitable? A district will be profitable when the difference between the value of the plots of land that result after urban development, with building permission or to be sold, and the total expenses incurred to carry out such development, is positive and when this difference reaches a percentage of the total investment equal or superior to the current industrial profit of the real estate sector. This difference is known as the district's urban differential. " (op. cit., page 46).

"It is evident that the urban differential of any district depends on a series of factors that fluctuate in time and that evolve according to the normal mechanisms or rules of operation of the real estate market. It may serve as an example that the price of a certain type varies from one year to the next, as is the case of the urban development costs, interest rates, industrial profit, etc. Therefore, the urban differential should also vary over time". (op. cit. page 46).

"There has to be awareness that, when a district is to be developed in the future, it cannot then have the same urban differential as it had at the time of its design. Therefore, it is necessary to follow the evolution of the urban differential in order to determine whether any modification or review to the general planning has to be made at any time. Likewise, if the urban differential is correct, the sector will be developed with no need to introduce modifications to the general plan. Otherwise, the district is condemned and will not be developed." (op. cit. page. 47).

---

<sup>1</sup> Coll, J.I., Guarnier, V., i Hosta, L.I. (1992), "**La pràctica de la gestió urbanística**", Director General of Town Planning, Generalitat de Catalunya. There is also a more recent work, Hosta, L., i Gràcia, A., (1999), "**Manual per a l'execució del planejament en la compensació i la cooperació**", SCUVIC S.L., Barcelona.

<sup>2</sup> It has to be understood that reference is made to the general planning and the modifications considered thereto.



This document refers particularly to the following elements:

1. Dimensioning the new supply of space for activity resulting from the new urban configuration.
2. Demand for space for activity in Barcelona and Poble Nou.
3. Viability of the new urban charges to be financed with the increased building index.
4. Approximation of the real estate viability of the transformation tasks (Special Plans).

## 2. DIMENSIONING OF THE LAND AND SPACE RESULTING FROM THE URBAN PLANNING AND STAGES PLAN

The urban operation to renew the industrial areas in Poble Nou involves an area of 198.26 hectares and transforms 115.96 of industrial land. The total potential of this transformation is 3,088,879 m<sup>2</sup> of new space, 2,659,854 m<sup>2</sup> of which correspond to new spaces for productive activities, 343,777 m<sup>2</sup> of space for new housing and 85,248 m<sup>2</sup> destined to completing the areas reserved for parking, technical services or housing. With this transformation, it is also possible to create new land for amenities (between 140,240 and 151,322 m<sup>2</sup>) and green areas (between 61,880 and 77,224 m<sup>2</sup>), with these quantities varying as they depend on the 0.2 m<sup>2</sup> roof/m<sup>2</sup> land additional complementary net index destined to housing. The net global result of the transformation, with reasonable hypotheses of maintenance and rehabilitation of pre-existing space in consolidated plots and replacing current space by new transformed space, is 2,871,027 m<sup>2</sup> total roof surface area (2,275.803 m<sup>2</sup> of productive activities, 509.976 m<sup>2</sup> housing space and 85,248 m<sup>2</sup> of parking, technical services or housing ). As to the amenities and green areas, this result gives a total land area of between 247,999 and 259.081 m<sup>2</sup> for the former and between 105,846 and 121,190 m<sup>2</sup> for the latter.

To evaluate the potential of transformation at the different stages of development, the situation of the different blocks has been studied in terms of the costs involved in the transformation and degrees of consolidation (see section 5 of this study). We have also taken into account the potential demand for space for activity in Barcelona and Poble Nou (see section 3 of this study). We have also borne in mind the dynamics of maturity of the real estate product of the features contained in this modification to the General Plan. The result (see table 2) is a forecast of development that is coherent with the potential of the activities market for absorbing this new space and the real situation of the transformation areas. The potential roof surface area will be fully developed over a period of 20 years (2000-2019). The most intensive development (35%) will take place between 2005-2009 and the least intensive (14%) at the end of the period. On the horizon of 2010, it is foreseen that around 58% of the total roof surface area potential for productive activities will have been completed, representing an availability of some 1,559,150 m<sup>2</sup> of space.

Before this modification, the estimates available about Barcelona's urban dimension stood at some 7.4 million square metres of new space (see table 3), with that of Poble Nou representing 32% of the total. With the building indices in force prior to this modification of the General Plan (2 m<sup>2</sup> of space per m<sup>2</sup> of land), the urban potential of the Poble Nou district was calculated as 2,401,447 m<sup>2</sup> of space, distributed as follows:

- Renovation 2000-2010 (plots with the most transformation possibilities): 1,397,769 m<sup>2</sup> roof surface area
- Transformation after 2010 (remaining plots): 1,003,678 m<sup>2</sup>.

The new urban arrangement, with a maximum building index of 3.2 m<sup>2</sup> roof/m<sup>2</sup> land in the predefined operations and 3.0 m<sup>2</sup> roof/m<sup>2</sup> land in undefined actions, increases by 687,432 m<sup>2</sup> the potential urban roof surface area of Barcelona and Poble Nou. With this modification, the urban potential of Barcelona increases by 9.5% and is established in 8.1 million square metres of roofing. This is therefore a modification that, while facilitating the location of uses of the ICT industries, along with universities and offices, does not exceed current expectations in any significant way and can therefore finance, as shown below, the total renovation of the 22@BCN activities, with the technological requirements exacted by the new activities to be located.

The new urban planning arrangements will also make it possible to increase the number of jobs available in Poble Nou. According to the 1996 Census, this currently stands at around

31,000. With the hypothetical maximum density of 25m<sup>2</sup> roof surface area per job, the new productive district would accommodate more than 91,000 jobs. This new urban planning therefore provides for an increase of some 60,000 jobs by the end of the development period.

In short, the modification to the planning means:

- Available space for new economic activity of 2,659,859 m<sup>2</sup>.
- Development of 58% by the year 2010.
- An offer of new subsidised housing, between 343.777 and 429.025 m<sup>2</sup>.
- An increase of 60,000 jobs, approximately.
- An increase of green areas to between 61,880 and 77.244 m<sup>2</sup>.
- An increase of land for amenities between 140,240 and 151.322 m<sup>2</sup>

**TABLE 1**  
**Summary of the urban potential, per use, of the MPGM for the renovation of the industrial areas in Poble Nou**

	LAND	TRANSFORMATION 22@ LAND	ACTIVITY SPACE		HOUSING SPACE		SPACE FOR PARKING, TECH.SERVICES and/or HOUSING
			EXISTING	POTENTIAL built: 2.7m²/m²l	EXISTING	POTENTIAL built 0.3m²r/m²l	POTENTIAL built: 0.2m²r/m²l
<b>TOTAL SCOPE</b>	<b>1,982,699</b>						
ROADS	659,343						
GREEN AREAS -6, 17/6-	43,966						
FACILITIES -7,17/7-	107,759						
OTHER SYSTEMS	3,978						
22@ ZONE	1,159,626						
OTHER ZONES -12,13,18-	8,027						
<b>TRANSFORMATION OPERATIONS</b>	<b>1,249,718</b>	<b>955,487</b>	<b>1,051,968</b>	<b>2,659,854</b>	<b>73,054</b>	<b>295,539</b>	<b>85,247</b>
<b>PRE-DEFINED OPERATIONS</b>	<b>559,322</b>	<b>407,061</b>	<b>474,908</b>	<b>1,150,833</b>	<b>30,966</b>	<b>127,870</b>	<b>85,247</b>
1- CAMPUS AUDIOVISUAL	43,508	24,334	53,509	117,471	3,777	13,052	8,702
2-LLACUNA	98,439	76,424	83,548	206,344	4,983	22,927	15,285
3-PARC CENTRAL	85,459	67,900	75,166	183,329	1,744	20,370	13,580
4-LLULL PUJADES	48,304	44,924	32,678	121,295	2,680	13,477	8,985
5-PERÚ-PERE IV	74,368	63,778	82,451	172,200	1,458	19,133	12,756
6-LLULL PUJADES PONENT	209,245	129,701	147,556	350,194	16,324	38,910	25,940
<b>OPTIONAL OPERATIONS</b>	<b>690,396</b>	<b>548,427</b>	<b>577,060</b>	<b>1,509,021</b>	<b>42,088</b>	<b>167,669</b>	
GRAL BLOCKS 1 <sup>st</sup> PHASE <=30,000	389,169	309,768		836,372		92,930	
GRAL BLOCKS 2 <sup>nd</sup> PHASE >30,000	262,542	210,445		568,201		63,133	
UA-11	24,168	13,698		65,254		7,250	
22@ OTHER PLOTS	14,516	14,516		39,194		4,355	
<b>CONSOLIDATED PLOTS</b>		<b>204,136</b>	<b>667,917</b>		<b>239,253</b>	<b>48,238</b>	
CONS. HOUSING FRONTAGES		73,185	99,768		199,500	48,238	
CONSOLIDATED ACIVITIES		10,353					
BUILD. INDEX >=2.5 M²R/M²L & <=3M²R/M²L							
Activities		24,656	67,103		2,310		
Housing		4,924	4,796		8,832		
BUILD. INDEX >3M²R/M²L							
Activities		81,483	485,448		3,843		
Housing		9,535	10,802		24,768		
<b>PRE-EXISTING ELEMENTS MAINTAINED</b>		<b>204,136</b>	<b>667,917</b>		<b>239,253</b>		
<b>TOTAL PLOTS UNDER TRANSFORMATION</b>	<b>1,249,718</b>	<b>955,487</b>	<b>1,051,968</b>	<b>2,659,854</b>	<b>73,054</b>	<b>343,777</b>	<b>85,247</b>
<b>TOTAL</b>	<b>1,249,718</b>	<b>1,159,623</b>	<b>2,275,803</b>		<b>509,976</b>		<b>85,247</b>

**\*GREEN AREAS AND \*LOCAL AMENITIES:** Potential assuming the additional complementary index of 0.2 m² roof/ m² land not destined to housing

The resulting potential in the case of applying the index 0.2 m² roof/ m² land entirely to housing would be:

Green area: potential plots under transformation 77,224 m², total 121,190 m² of land.

Local amenities: potential plots under transformation 55,773 m², total 101,768 m² of land

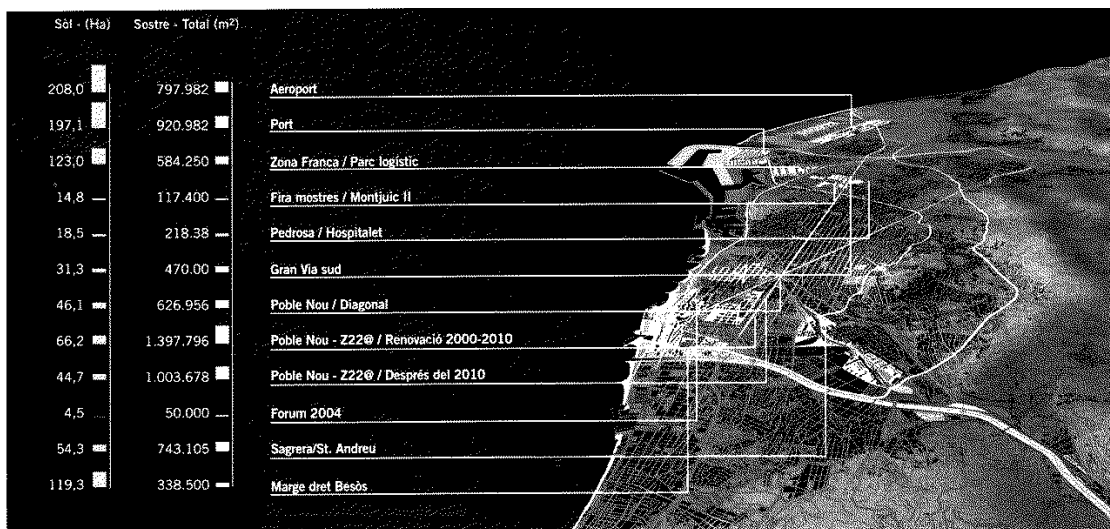
TOTAL POTENTIAL ROOF AREA	* GREEN AREAS	* LOCAL FACILITIES	@ FACILITIES	
	43,966	45,995	61,764	
<b>3,040,641</b>	<b>53,197</b>	<b>38,420</b>	<b>95,549</b>	
<b>1,363,951</b>	<b>23,017</b>	<b>16,623</b>	<b>40,706</b>	
139,225	2,349	1,697	2,433	
244,556	4,127	2,981	7,642	
217,279	3,667	2,648	6,790	
143,758	2,426	1,752	4,492	
204,089	3,444	2,487	6,378	
415,044	7,004	5,058	12,970	
<b>1,676,690</b>	<b>30,180</b>	<b>21,797</b>	<b>54,843</b>	
929,303	16,727	12,081	30,977	
631,334	11,364	8,207	21,044	
72,504	1,305	943	1,370	
43,549	784	566	1,452	
<b>48,238</b>	<b>8,683</b>	<b>6,271</b>		
48,238	8,683	6,271		
<b>3,088,879</b>	<b>61,880</b>	<b>44,691</b>	<b>95,549</b>	
<b>2,871,027</b>	<b>105,846</b>	<b>90,686</b>	<b>157,313</b>	

TABLE 2

**Stages Plan****Development of the new potential space for productive activities**

	TOTAL POTENTIAL SPACE	2000-2004	2005-2009	2010-2014	2015-2019
<b>Pre-defined operations</b>	<b>1,150,833</b>	345,251	460,331	345,251	
<b>Optional operations</b>	<b>1,509,021</b>				
Charges =<38,000Ptas/m <sup>2</sup> potential	901,626	180,324	360,651	180,325	180,326
Charges >38,000Ptas/m <sup>2</sup> potential	607,395	91,109	121,479	212,588	182,219
<b>TOTALS</b>	<b>2,659,854</b>	<b>616,684</b>	<b>942,464</b>	<b>738,164</b>	<b>362,545</b>
	100%	23%	35%	28%	14%

**TABLE 3**  
**Urban potential of Barcelona**



Operació urbanística	Sòl (Ha)	Sostre Total (m²)	Edif. m²/m²	Sostre per usos (m²)					
				Oficina	Noves activitats Indústria-oficina	Indústria / logística	Comercial	Habitatge	Hoteler - Altres
<b>Àrea del Llobregat</b>									
Port: Zona d'Activitats Logístiques (ZAL)	197,1	920.982	0,47	-	-	885.473	-	-	35.509
Aeroport: Zona de Càrrega i d'Activitats	208,0	797.000	0,38	123.000	208.000	270.000	10.000	-	50.000
Zona Franca/Parc Logístic	123,0	584.250	0,48	215.250	-	369.000	-	-	-
Fira de mostres/Montjuïc 2	14,8	117.400	0,79	-	-	-	-	-	117.400
Pedrosa/Hospitalet	18,5	218.380	1,18	-	-	207.400	5.490	-	5.490
Gran Via Sud	31,3	470.000	1,50	-	-	470.000	-	-	-
<b>Àrea del Besòs i Poblenou</b>									
Front litoral-Marge dret Besòs	119,3	338.500	0,28	-	80.000	-	8.000	198.500	22.000
Forum Universal 2004	4,5	50.000	1,11	-	-	-	-	-	30.000
Sagrera-Sant Andreu/Estació TAV	54,3	743.105	1,37	62.531	-	-	9.087	539.243	48.497
Poblenou/Diagonal	46,1	626.956	1,36	26.769	138.299	-	97.526	290.329	74.033
Poblenou-Z22@/Renovació 2000-2010	66,2	1.397.769	2,11	-	1.337.079	-	1.958	58.732	-
Poblenou-Z22@/Després del 2010	44,7	1.003.678	2,25	-	858.302	-	20.768	124.608	-
<b>Hotels</b>	4,7	118.557	2,50						
<b>POTENCIAL TOTAL</b>	932,5	7.386.577	0,79	427.550	2.621.680	2.201.873	152.829	1.211.412	348.577
<b>POTENCIAL 2000-2010</b>	592,0	5.064.406	0,86	233.100	1.680.178	1.267.989	128.061	1.086.804	328.577

Source: Town Hall of Barcelona-Barcelona Regional S.A. (1999) " *Barcelona Nous Projectes*", page 34-35.

**TABLE contents**

**Urban development operation**

**Land (Hectares) / Total Roofing / B. Index / Roof by use / Office / New activities /  
Industry-office/ Commercial / Housing / Hostelry / Other**

**Llobregat Area**

**Port (Logistic Activity Zone)  
Airport: Loading and Activity Zone**

....

**Trade Fair /Montjuic 2**

....

**Gran Via South**

**Besòs and Poble Nou Area**

**Coastal front-Right side Besós**

...

**Sagrera-Sant Andreu/High-speed train station**

...

**Poble Nou Z22 @/Renovation 2000-2010**

**Poble Nou Z22 @/After 2010**

**Hotels**

**TOTAL POTENTIAL  
POTENTIAL**

**2000-2010**

### 3. DEMAND FOR SPACE FOR ACTIVITIES IN BARCELONA AND POBLE NOU.

The dynamics 1993-1998 in Barcelona.

Economic activity in Barcelona occupied 22,284,898 m<sup>2</sup> total space at the start of 1999, as per the Economic Activity Tax. The service nature of the metropolitan centre is evident in comparison with a lesser amount of industry (4,166,545 m<sup>2</sup> equivalent to 19%). The services sector is distributed among trade (6,063,183 m<sup>2</sup>), professional offices (641,949 m<sup>2</sup>) and other services (11,413,221 m<sup>2</sup>).

Recent dynamics confirm the tertiary nature of the centre, with very strong growth in services and a fall in industrial activity. These dynamics also reflect the general increase in services, with a general swing from industry to the tertiary sector. This sector grew by 20% in the five years under study (1,939,268 m<sup>2</sup>) whereas the industrial sector fell by 17% (834,276 m<sup>2</sup>). Trade and professional activities remained more or less constant.

The dynamics of the service sector in the period in question (1993-1998) grew by an average of 387,854 m<sup>2</sup> space per year, within total net growth of 245,938 m<sup>2</sup> of roof surface area per year, as a repercussion from the falling industrial activity.

#### EAT DYNAMICS 1993-1998

SECTORS	1993	1998	1993-1998	%	m <sup>2</sup> /Year
INDUSTRY	5.000.821	4.166.545	-834.276	17%	-166.855
TRADE	5.913.596	6.063.183	149.587	3%	29.917
SERVICES	9.473.953	11.413.221	1.939.268	20%	387.854
PROFESSIONALS	666.840	641.949	-24.891	-4%	-4.978
<b>TOTAL</b>	21.055.210	22.284.898	1.229.688	6%	245.938

Source: Barcelona City Council - Gabinet Tècnic de Programation (2000) *"Trends in economic activities in Barcelona, according to the Economic Activity Tax 1993-1998 - Document number 16"*



SERVICES	1993	1998	1998-1993	%	m²/Year
Transport and communication	2.391.092	2.899.802	508.710	21%	101.742
Hostelry/ restaurants	1.739.234	2.069.604	330.370	19%	66.074
Cultural services, leisure, trade fairs	771.820	1.210.853	439.033	57%	87.807
Services to companies and individuals	1.466.985	1.808.040	341.055	23%	68.211
Teaching and research	1.228.850	1.341.578	112.728	9%	22.546
Health and social aid	448.077	577.825	129.748	29%	25.950
Personal services and others	226.934	276.678	49.744	22%	9.949
Real Estate promotion services	52.804	90.633	37.829	72%	7.566
Insurance	260.743	281.080	20.337	8%	4.067
Real estate rentals	81.992	88.362	6.370	8%	1.274
Financial services	805.422	768.766	-36.656	-5%	-7.331
<b>TOTAL</b>	9.473.953	11.413.221	1.939.268	20%	387.854

Source: Barcelona City Council - Gabinet Tècnic de Programation (2000) *"Trends in economic activities in Barcelona, according to the Economic Activities Tax 1993-1998 - Document number 16"*

The dynamics of the labour market confirm the trends resulting from the evolution of space occupied by economic activity. In the 1994-1999 period, the increase in salaried jobs in the municipality of Barcelona was 17%. In the same period, the growth in the Metropolitan Region as a whole was 24%. Total growth is above all the result of the trend towards the tertiary sector, which registered increases of 23% in Barcelona and of 28% in the entire Metropolitan Region. Growth of salaried jobs in Barcelona between 1994 and 1999 is estimated at 111,000 located jobs, at a pace of some 22,000 jobs per year.

## DYNAMICS OF SALARIED JOBS PER SECTORS

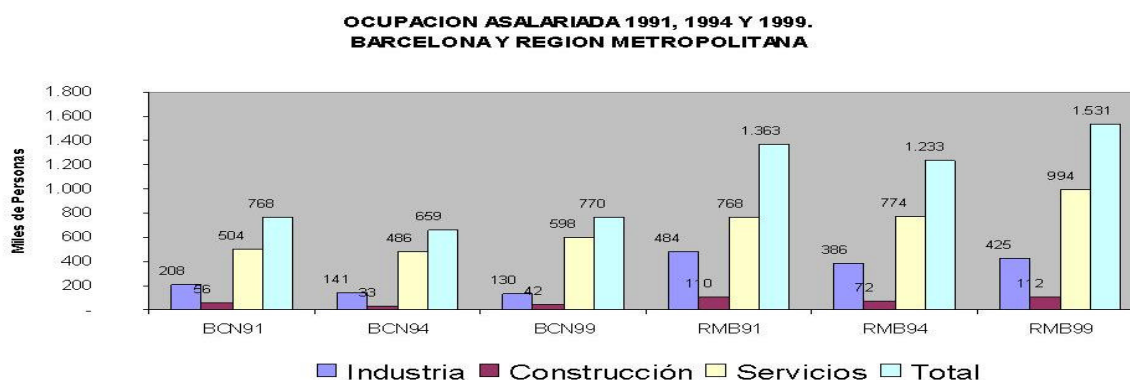
(Absolute values for Barcelona and Metropolitan Region of Barcelona)

SALARIED OCCUPATION 1991, 1994 AND 1999

BARCELONA AND METROPOLITAN REGION

Thousands of People

Industry/Construction/Services/Total



Source: INSS and own resources

The estimate of the employment dynamics in the municipality of Barcelona is in line with the results obtained from the dynamics of activity space. Indeed, the services trend in Barcelona in 1999 reached the proportion of 78% of localised jobs compared to 66% in 1991. Meanwhile, between 1991 and 1999 the speed of the switch from the industrial sector to services was higher in the municipality of Barcelona than in the rest of the metropolitan area (12 percentage points to 9). This was a period during which the municipality of Barcelona witnessed the moving out of major production centres such as SEAT (Martorell) or GEC Alsthom (Santa Perpètua), which were able to increase their payrolls and reorganise their productive processes in a way that was not really possible at their original premises.

The result is a metropolitan system with a better economic health, facilitating the centralised location of more managerial activities.

A scenario for the possible location of productive activities in Poble Nou.

The activities to be set up, by preference, in Poble Nou, will be those that most value the economies of a central location with modern infrastructures: those associated with the information and communication technologies and, in general, activities involving advanced technology. In addition, offices with managerial functions in the metropolitan, regional and national system.

The minimum time span for assessing the short-term demand for location in Poble Nou is the most recent period after the negative economic cycle of the 1992-1994 period. The

period from which information is available (1993-1998) is suitable from the standpoint of forecasting, bearing in mind that the average annual growth of GNP during these years was 2.5%. It is entirely reasonable to expect this level to be reached in the next decade, or even more, making it possible to forecast several scenarios of economic growth.

On the current basis of the sector breakdown of the IAE (Economic Activity Tax) within a same activity sector, we find companies with central and managerial activities and others with local activities, wholesalers and retailers, the transport and communications sector, financial services, etc. Barcelona covers both functions at once. For this reason, given the objective difficulty of making more exact forecasts, Poble Nou's participation in the general dynamics of absorbing productive space is set in a time span that is unequalled in its proportions.

The industrial and port zoning of the PGM in force in Barcelona is 1.235 hectares. In addition to Poble Nou, there is the Zona Franca (432 hectares), excluding the Mercabarna area, the port zone (286 hectares) and the industrial states of Bon Pastor (121 hectares) and Besòs – Sagrera (74 hectares). Poble Nou's weight in the entire complex is 19.7%.

Bearing in mind that the other industrial areas have no possibility of renovation such as that foreseen for Poble Nou, its share of the demand as a whole could well be 3 or 4 times the proportional share. Part of the offices will continue to be located in the traditional centre, but the supply of new offices seems to be running out and transport activities will not be allowed in Poble Nou. The demand derived from the industrial activities will be a new demand - only the Paper and Graphic Arts sector has had a positive demand in Barcelona over the last five years.

For these reasons, Poble Nou's share in the municipality's dynamics will be between a minimum of 40% and maximum of 60%. Applying these proportions to the trend of 387,854 m<sup>2</sup> per year of space for service activities of all kinds, the potential demand in Poble Nou is around 155,034 m<sup>2</sup> with 232,550 m<sup>2</sup> of new space per year, giving an average assumption of 194,000 m<sup>2</sup> of new space per year. This projection may be revised upward if we consider the fact that, over recent years, a latent demand may have arisen, a demand that was not satisfied by Barcelona due to the limited supply, or in other words, due to the effects of a lack of attractive location opportunities.

### **The demand for offices in Poble Nou.**

Offices represent the productive use in most demand in the municipality of Barcelona, for which supply is highly limited. The excess supply with regard to the demand that arose in 1992 has been absorbed - the market now presents the case of companies that are unable to set up in Barcelona due to insufficient supply.

Shown below are some of the most significant conclusions concerning the estimate of the future demand for space for services in Poble Nou, according to the study drawn up by the real estate consultants Aguirre Newman on the office market in Barcelona (Aguirre Newman, November 1999, "Estudi de la demanda d'Oficines al Poble Nou en el període 1999-2004 i requeriments urbanístics de la seva localitzation" – "Poble Nou: El futuro terciario de Barcelona": Study on the demand of offices in Poble Nou during the period 1999-2004 and urban planning requirements for their location – Poble Nou, the tertiary future of Barcelona):

From the "Executive Summary" of this document

- "Poble Nou has the potential to become Barcelona's driving force and the reference point of what the city can contribute to business activity.

- Barcelona currently has a stock of 4 million square metres of offices, which amount to 56% of the stock of Madrid and 16% that of London.
- The City Council has to guarantee the transformation of Poble Nou irrespective of the economic and real estate cycle. The outlook has to be at 15-20 years. The clearest example of this was the Docklands in London, the best example of how a city ensures its position in Europe by regenerating a degraded area...
- We estimate that Poble Nou has a service absorption potential of 1.4 million square metres over 10 years.
- If Barcelona does not create a services pole in Poble Nou, it would have to do so somewhere else. Otherwise, it will continue to lose users who are changing to other places to obtain better conditions.
- The services development in Poble Nou has to be achieved in stages, attempting to concentrate service nuclei.
- For the transformation of Poble Nou...(there are three scenarios for absorption. According to the kind of action):
  - Transforming Poble Nou with uses that include services and allowing the market to regulate the promotion of offices, kind of building, kind of user and absorption
  - Transforming Poble Nou with an important services component by means of active steps by the City Council.
  - Developing the above option combined with direct marketing actions to attract the demand and foment interest in Poble Nou"

The three options will generate the following demands and rental prices:

- Option 1:	35,000 m <sup>2</sup> /year	1.500-1.700 Ptas/m <sup>2</sup> /month
- Option 2:	95,000 m <sup>2</sup> /year	1.900-2.200 Ptas/m <sup>2</sup> /month
- Option 3:	135,000 m <sup>2</sup> /year	2.200-2.400 Ptas/m <sup>2</sup> /month

	Opción 1	Opción 2	Opción 3
Capacidad de Absorción	35.000 m <sup>2</sup> /año	95.000 m <sup>2</sup> /año	135.000 m <sup>2</sup> /año
% Absorción Barcelona	17,76%	48,22%	68,53%
Nivel de rentas Ptas./m <sup>2</sup> /mes	1.500 – 1.700	1.900 – 2.200	2.200 – 2.400
Tipología de Edificios	Oficinas semi – industrial	Zona Diagonal Zona C/ Tarragona	Zona Diagonal Zona C/ Tarragona
Tipología de usuario	Busca oficinas baratas con almacén	Aguas de Barcelona Gas Natural	IBM Citibank
Efecto	El factor industrial sigue siendo el predominante	Se consolida Poblenou como centro de oficinas	Se proyecta a nivel nacional e internacional
Competencia	Cityparc – Comella Sant Cugat – Mas Blau	C/ Tarragona – Eixample Diagonal Alta	C/ Tarragona Diagonal Alta + Europa

## TABLE CONTENTS

### **Option 1/2/3**

**Absorption capacity / 35,000 m<sup>2</sup>/year**

**% Absorption Barcelona 17.76 %**

**Rent level Ptas/m<sup>2</sup>/month / 1,300 - 1,700**

**Type of Building / Semi-industrial offices / Diagonal Zone Tarragona St. Zone /**

**Type of User / Seeks cheap offices with storage /**

**Effect / The industrial factor is still predominant / Poble Nou is consolidated as an office centre / Projected at a national and international level**

### **Competition**

Source: Aguirre Newman, November 1999, "Estudi de la demanda d'Oficines al Poble Nou en el període 1999-2004 i requeriments urbanístics de la seva localitzation" – "Poble Nou: El futuro terciario de Barcelona" (Study on the demand of offices in Poble Nou during the period 1999-2004 and urban planning requirements for their location – Poble Nou, the tertiary future of Barcelona):

With regard to the demand for offices in Barcelona, the Aguirre Newman study presents the following conclusions (op. cit. page 25):

- "Barcelona's gross absorption over the last 10 years has been 1,400,000 m<sup>2</sup>. This is equal to an annual average of 140,000 m<sup>2</sup>.
- Gross absorption over the last three years was 500,000 m<sup>2</sup>. This is equal to an annual average of 166,000 m<sup>2</sup>.
- Over the last two years, for every 10 m<sup>2</sup> rented, 4 m<sup>2</sup> were "net"
- During 1998, gross absorption reached a total of 212.754 m<sup>2</sup>, which shows a clear increase of around 32% compared to 1997, equalling the absorption reached in pre-Olympic years."
- "Currently, 35-45% of the stock of offices is considered obsolete, failing to meet the user's requirements" (page 4).

The estimate of total absorption of offices of "international quality" in Barcelona and its metropolitan area is estimated in the reference study as 197,000 m<sup>2</sup> per year. Poble Nou's share in the most expansive hypothesis, according to this study, is 69% of the entire metropolitan absorption, accounting for 135,930 m<sup>2</sup> per year.

## Conclusion

The operation in Poble Nou arises as a unique opportunity to centralise an excessively decentralised metropolitan process. With regard to the demand for the location of productive activities in Poble Nou, one may conclude that the demand of "international quality" offices alone would ensure a demand over ten years of 1,300,000 m<sup>2</sup> of space, equivalent to 49% the new space potential of productive activities resulting from the modification to the General Plan as proposed. The space for offices could reach a share of 60-70% of the total demand for productive space in Poble Nou.

#### 4. REPORT ON THE ECONOMIC FEASIBILITY OF THE URBAN DEVELOPMENT CHARGES

The urban development charges are calculated aggregately in the current document, as well as the financing on the part of the public service supplying companies and those providing existing activities or new localisation of activities. The approval of the Special Infrastructure Plan will entail the detailed evaluation of the redevelopment work and the appropriate financing plan.

The balance between the profits brought by the planning and the charges demanded by the urban planning regulations only requires emphasising that the market value of the building is sufficient for the urban development charges internalised in the urban development operations.

The most plausible investment required by the Infrastructure Plan, in accordance with the urban planning suppositions contained in the advanced Infrastructure Plan and detailed in full in the regulations in this modification, suggests a unit cost of around 30,000 Ptas/ m<sup>2</sup> of road (659,343 m<sup>2</sup>) and a total investment of 19,780 million pesetas, approximately.

Regarding financing, it is predicted that the public service supplying companies will account for 30% of the total cost of the Infrastructure Plan. 70% will be carried by the owner of the land under transformation (1,269,409 m<sup>2</sup>). With these suppositions, the economic redevelopment charge to be carried by the owners of reclassified land is limited to 10,907 Ptas./m<sup>2</sup> of land. With a building index of 2.7 m<sup>2</sup> of roof surface area per m<sup>2</sup> of land, this charge represents a cost of 4,040 Ptas per m<sup>2</sup> of potential roof surface area.

Regarding the content of the redevelopment costs associated to the planning modification, it is important to emphasise that this does not include indemnification for the relocation of existing activities or housing, which will form part of the economic and financial study of each Special Internal Reform Plan, as the increase in the building index from 2 to 2.2 m<sup>2</sup> of roof per m<sup>2</sup> of land only carries the economic obligation of financing a part of the Infrastructure Plan. Under no circumstances should the land concessions be included, as these are neutral since they do not reduce the building index.

The benchmark real estate prices are the following:

- Sale price of 150-170,000 Ptas per m<sup>2</sup> of roof surface area in “22a” in Taulat street. This operation does not use up all the building index. The cost of construction can be set at a maximum of 50-60,000 Ptas per m<sup>2</sup> and does not include any repercussion for parking. With the application of the residual method of calculation the land repercussion, or the formula of the property register itself, the repercussion of developed land is in the vicinity of 65-70.000 Ptas/ m<sup>2</sup> of roofing.
- Sale price of 210- 230.000 Ptas/m<sup>2</sup> for new real estate for activity, possible in this location. These buildings, with a typology of three or more floors, underground parking, a possible ground floor for storage and distribution and apartment floors including air conditioning for office activity. The building cost is around 85-90,000 Ptas/ m<sup>2</sup> roofing after distributing the underground parking in the above-ground building index. The resulting land, applying the same criteria, would be 70-80,000 Ptas/ m<sup>2</sup> roof surface area.

- The information on recent transaction values shows a minimum of 70,000 Ptas/ m<sup>2</sup> roof and a maximum of around 100,000 Ptas/ m<sup>2</sup> with respect to the current building index of 2 m<sup>2</sup> of roofing per m<sup>2</sup> of land, although the transaction value is more biased towards the minimum rather than the maximum figure. These values indicate the real estate market is, in fact, giving the activity district of Poble Nou significant expectations of value, independently of the maximum building index.

High tech activities, @ activities and offices necessarily bring about an increase in the expectations of value. Real estate prices, which may rise in real terms by 2% per year in any location of the city, will be higher in Poble Nou due to the new activities.

Regarding the forecast for the financing of the Infrastructure Plan, the increases in value produced by the previous effects may compensate the increase in cost which may occur as a result of a financing plan that prioritises investment before its consequent payment via the transformation process.

With this planning, within current and future margins of land prices, the increase in the building index of 0.2 m<sup>2</sup> roof per m<sup>2</sup> of land generates an added value of between 14,000 and 20,000 pesetas per m<sup>2</sup> of land, and this may finance part of Infrastructure Plan costs of 10,907 pesetas per m<sup>2</sup> of land (13,846 million pesetas). At its extreme, the added benefits generated by the increase of the building index by 0.2 m<sup>2</sup> of roof per m<sup>2</sup> of land would allow the landowner to finance a share of the Infrastructure Plan amounting to between 17,666 and 25,237 million pesetas. The Infrastructure Plan will evaluate in detail the planned investments, the charge allocation mechanisms and the provisions for financing by the various agents.

## INFRASTRUCTURE PLAN

### 1. Surface area and cost plan:

	m² road	unit cost Ptas/m²	TOTAL	FINANCING		
				Land owner MPGM	Service Companies	Others
Scope MPGM	659,343	30,000	19,780,290,000	13,846,203,000	5,934,087,000	
Out of scope	53,679	30,000	1,610,370,000			1,610,370,000
<b>TOTAL</b>	<b>713,022</b>		<b>21,390,660,000</b>	<b>13,846,203,000</b>	<b>5,934,087,000</b>	<b>1,610,370,000</b>

### 2. Computable land:

22@ Zones	1,159,626
Corrector UA4 DPN <sup>3</sup>	19,174
Corrector UA11 DPN <sup>3</sup>	10,470
Corrector non-compliant buildings <sup>4</sup>	80,139
<b>TOTAL m²</b>	<b>1,269,409</b>

### 3. Price forecast:

a) Land :  $\frac{13,846,203,000}{1,269,409} = 10,907$  Ptas. m² land

b) Roofing :

Building index 2.2 = 4,958 Ptas. m² roofing  
 Building index 2.7 = 4,040 Ptas. m² roofing

### 4. Forecast of benefits and charges per m² of land as a consequence of the increase in the building index of 0.2 m² r / m² land and of the Infrastructure Plan financing

Current prices for the industrial uses of land in Poble Nou, under the existing building index of 2 m²r/m²l, is a minimum of 70,000 Ptas /m² roofing and a maximum of around 100,000 Ptas / m² roofing.

An increase in the building index of 0.2 m² r/m² land generates an added value of between 14,000 Ptas and 20,000 Ptas per m² of land.

The predicted cost of financing the Infrastructure Plan amounts to 10,907 Ptas. per m² of land.

As a consequence, the Infrastructure Plan may be financed with a part of the added value generated by the increase of the building index of 0.2m² r/m² land.

<sup>3</sup> Different classifications to 22 which generate building index

<sup>4</sup> Non-compliant buildings: b.i. >3 m² r/m² l

- charge non-compliant building: (land + corrector land) · c

Corrector land =  $\frac{\text{roof}}{3} - \text{land}$

c = charge in Ptas m² land

[ land +  $\frac{\text{roof}}{3} - \text{land}$  ] · c

- Corrector of non-compliant buildings in the financing plan for the Infrastructure Plan

Built roofing in non-compliant buildings of predominantly productive use 505,596 m²

Land non-compliant buildings 88,393 m²

$\frac{505,596}{3} - 88,393 = 80,139$  m² land

3



## **5. AN ESTIMATE OF THE REAL ESTATE FEASIBILITY OF THE TRANSFORMATION OPERATIONS (SPECIAL PLANS).**

The real estate feasibility of the proposed transformation has undergone an initial estimation. The MPGM document regulates the development of the transformation operations to be developed via Special Internal Reform Plans.

An operation shall be considered viable when the difference between the value of the resulting plots that are already developed, liable to development or to being sold, and the total expenses to carry out this urban development is positive, and when this difference constitutes a percentage of the total investment that is equal to or greater than the current industrial profit of the real estate sector.

The document defines the specific ranges of the derived planning, of public initiative, with the aim of creating new elements of urban structure and of facilitating the development of strategic urban development transformation operations in order to create new dynamics in the sector. These are the following:

- Eix Llacuna
- Parc Central
- Campus Audiovisual
- Llull-Pujades (Llevant)
- Llull-Pujades (Ponent)
- Perú-Pere IV

Similarly, the document facilitates the development of interventions that are not expressly specified, to be developed via Special Plans. In this case, the range of the Special Plans is not predetermined. In general, the minimum range of action must be 60% of the planning range (an Eixample-type block), without including in this percentage the building fronts and consolidated industrial buildings. The regulations also provide certain exceptions for blocks defined by "passatges" (80% of land) and for plots with a minimum area of 2,000m<sup>2</sup> (range admitted with the conditions defined in the urban planning regulations).

The most significant parameters of the Special Plans, from the point of view of calculating the feasibility of the transformation operations, are as follows:

Building index:

- Net building index: 2.20 m<sup>2</sup> roof surface area per m<sup>2</sup> of land.
- Net complementary building index for @ activities: 0.50 m<sup>2</sup>r/m<sup>2</sup>l
- Additional net complementary building index of 0.30 m<sup>2</sup>r/m<sup>2</sup>l of municipal ownership destined to housing use, under some kind of public protection scheme (compulsory in the development of interventions).

In determined transformation areas, the additional complementary index is increased by 0.20 m<sup>2</sup>r/m<sup>2</sup>l, also of municipal ownership, to complete the reserves for parking, to meet the needs of the necessary technical services in the sector and for housing under some kind of public protection scheme.

#### Uses:

- Those planned of a general nature in article 6 of the urban planning regulations. The concession of those uses not permitted by article 6 must be expressly planned for.

#### Concession by system:

- Concession of 10% of land for action destined to 7@ amenities.
- Concession by local systems of free space and developed urban amenities with a minimum quantity of 31 m<sup>2</sup> of land per residence.
- Concession, compulsory and free, of land corresponding to roads pending opening.

The criteria and parameters used in the evaluation of the urban development charges have been those that are used normally in the economic study of urban development plans, compared to the Urban Planning Management Service (IMU).

#### Evaluation of new construction:

The criterion generally applied is the assimilation of the value of a construction at its cost of construction, at current prices, depreciated according to antiquity, state of conservation, functional obsolescence, etc. As a reference, it seemed reasonable to use the property register values, as these evaluate land, constructions and services separately, and all these in accordance with relatively detailed, pre-set criteria. In order to bring these values closer to the real market values, they have been updated in accordance with the following formula:  $V_{c88} \times 1.51 \times 1.35$  = approximate market value

#### Evaluation of indemnification for eviction:

It is not the aim of this estimate to study the "real" situation of each of the activities developed in the area, which would include an analysis of the possibilities for transfer, the costs of the same, the difference between rents, loss of benefit, etc. As a consequence, some modules have been applied, compared with operations currently in course, according to the surface area and type of activity in the property register. These modules oscillate between 85,000 Ptas/m<sup>2</sup> of roofing for industrial use occupying a whole block and 20,000 Ptas / m<sup>2</sup> roofing for garage use.

#### Evaluation of demolitions:

The cost considered is 3,000 Ptas/m<sup>2</sup> roofing.

#### Evaluation of the urban development costs of the green areas and new roads:

The MPGM provides for the concession of 18 m<sup>2</sup> of green zone per 100 m<sup>2</sup> of housing of new creation. A module of 15,000 Ptas/m<sup>2</sup> of urban development of the green zone has been applied. When the transformation implies the opening of new streets, the urban development has been valued at 16,000 Ptas/m<sup>2</sup>. This cost is additional to the general Infrastructure Plan.

## Expenses and profits of land management:

The study of different real estate operations has allowed us to deduct 15% of the expenses and profits of land management. This percentage has been applied to the indemnification costs of activities, the value of the buildings to be demolished and demolishing costs.

## Infrastructure Plan

The road network area to be transformed is 659,343 m<sup>2</sup>. The provisions laid down by the Infrastructure Plan advise a transformation unit cost module of 30.000 Ptas/m<sup>2</sup> of road, higher than the ordinary standard urban development costs. The Infrastructure Plan, with this parameter, has been evaluated at 19,780 million pesetas. It is predicted that the public service companies will assume 3'0% of the investment and landowners 70%. With these parameters, the investment that must be financed by the owners of land to be transformed has been valued at 13,846 million pesetas. The cost per m<sup>2</sup> of transformed land is therefore estimated at 10,907 pesetas, representing a cost of 4,040 pesetas per m<sup>2</sup> of roofing, with a building index of 2.7 m<sup>2</sup> r/m<sup>2</sup> l.

The real estate product resulting from the transformation has a specific importance at the time of evaluating the real possibilities of developing the sector. The operations must be viable, both from the point of view of economics as from the real estate market, with highly specific product needs. According to the studies carried out (see section 3 of this economic and financial study), Poble Nou has the capacity to absorb 194,000 m<sup>2</sup>/year of new productive activity roofing, with offices accounting for a share of 60-70%. The resulting productive roof area allocation hypothesis, in accordance with available studies of demand, has been constructed in the following way:

Productive area-offices: 60% of total productive built area.

Productive area-industrial/tertiary: 40% of the total productive built area.

By applying the property register formula, the value of repercussion of the real estate product has been calculated. This provides the value of the land from the sale price of the real estate product, subtracting the cost of construction and the expenses and profit from the promotion.

$$V_r = (P_v/Co) - C_c.$$

The index used (Co=1.4) includes the expenses for managing the operation, including the profit and the financial cost, management expenses and promoter profit. The trend in the price of money during the last few years would allow this index to be reduced to a value of around 1.3. In this financial year, the value of land per m<sup>2</sup> of roof surface area would be high and the results more favourable. Notwithstanding this, the more conservative hypothesis has been used for this feasibility study.

The sale price of real estate has been obtained from available studies of the real estate market of offices and industrial-tertiary uses. The cost of construction, from data in the economic newsletter of the construction sector. These values have been compared with different real estate operators. The resulting value of land is as follows:

<b>CALCULATION OF THE VALUE OF PRIVATELY EXPLOITED LAND</b>			
<b>Real estate product</b>	<b>Sale price (Ptas/m<sup>2</sup>r)</b>	<b>Construction cost (Ptas/m<sup>2</sup>r)</b>	<b>Land price (Ptas/m<sup>2</sup>) Index 2.7 m<sup>2</sup>r/m<sup>2</sup>l</b>
Offices (hypothesis 60%)	351,000	140,000	110,714
Industrial-tertiary (hypothesis 40%)	230,000	90,000	74,286
<b>Value of land (Ptas m<sup>2</sup>/r)</b>			<b>96,143</b>
<b>Value of land (Ptas m<sup>2</sup>/l)</b>			<b>259,586</b>

### Results and conclusions:

With the defined hypotheses the different transformation operations have been studied, both pre-determined and optional. The most significant findings are as follows:

The pre-determined transformation operations account for 43% of the total transformation potential, representing transformation charges of between 31,000 and 40,000 pesetas per m<sup>2</sup> of potential roofing and residual land values of between 152,000 and 176,000 pesetas per m<sup>2</sup> of land.

34% of the potential roof surface area resulting from the transformation has transformation costs of ≤ 38,000 pesetas per m<sup>2</sup> of potential roofing and residual land values of between 157,000 and 188.000 pesetas per m<sup>2</sup> of land.

The transformation operations with the highest costs are around 43,000/56,000 pesetas per m<sup>2</sup> of potential roofing, and residual land values of between 108,000 and 144,000 pesetas per m<sup>2</sup> of land. These operations account for approximately 23% of the land undergoing transformation.

It should be remembered that the current value of land, with a building index of 2 m<sup>2</sup> of roofing per m<sup>2</sup> of land, is within the range of 140,000 to 200,000 pesetas per m<sup>2</sup> of land (with greater preponderance towards the lower end of the scale), and that in 1997 before expectations of reclassification, this value was in the region of 100,000 pesetas per m<sup>2</sup> of land.

In conclusion, the study shows that the planned transformation operations, both pre-determined and optional, are viable from the point of view of private real estate promotion. Only those operations with higher transformation costs, to be developed on more consolidated land (23% approximately) will have problems with their development objectives and will be carried out at a pace that evolves alongside the conditions of demand for product activity roofing and the prices of different real estate products. The development of the rest of the actions is guaranteed from the point of view of real estate viability, and will evolve at the pace of the demand for productive roofing (see section 3 of this study).

As an example, the following tables show three typical transformation scenarios and three real examples of specific blocks

	TYPICAL TRANSFORMATION SCENARIOS		
	EMPTY BLOCK	TRANSF. COSTS ≤ 38.000 ptas m <sup>2</sup> r	TRANSF. COSTS > 38.000 ptas m <sup>2</sup> r
<b>BLOCK SURFACE AREA</b>	<b>12,000</b>	<b>12,000</b>	<b>12,000</b>
<b>% TRANSFORMATION</b>	<b>100%</b>	<b>83%</b>	<b>75%</b>
<b>TOTAL POTENTIAL AREA FOR PRIVATE EXPLOITATION</b>	<b>32,400</b>	<b>26,892</b>	<b>24,300</b>
<b>HYPOTHESIS PRIVATE EXPLOITATION USES</b>			
Offices	19,440	16,135	14,580
Industrial/Tertiary	12,960	10,757	9,720
<b>TRANSFORMATION OF PRE-EXISTING ELEMENTS</b>			
M <sup>2</sup> building		12,000	14,333
M <sup>2</sup> active		7,117	12,650
<b>TRANSFORMATION COSTS (in millions of pesetas)</b>	<b>148</b>	<b>882</b>	<b>1,338</b>
Demolition		36	43
Building indemnification		204	244
Activity indemnification's		427	759
Land management		95	181
Infrastructure Plan	132	106	99
Urban development of concessions for roads and green areas	16	14	12
<b>COST PER M<sup>2</sup> R PRIVATE EXPLOITATION</b>	<b>4,568</b>	<b>32,798</b>	<b>55,061</b>
<b>LAND RESIDUAL VALUE (Ptas m<sup>2</sup> land)</b>	<b>247,252</b>	<b>171,031</b>	<b>110,921</b>

	REAL EXAMPLES OF THREE TRANSFORMED BLOCKS		
	1	2	3
<b>BLOCK SURFACE AREA</b>	<b>11,381</b>	<b>12,442</b>	<b>12,450</b>
<b>% TRANSFORMATION</b>	<b>100%</b>	<b>97%</b>	<b>66%</b>
<b>TOTAL POTENTIAL AREA PRIVATE EXPLOITATION</b>	<b>30,729</b>	<b>32,585</b>	<b>22,186</b>
<b>HYPOTHESIS OF USES PRIVATE EXPLOITATION</b>			
Offices	18,437	19,551	13,312
Industrial/Tertiary	12,292	13,034	8,874
<b>TRANSFORMED PRE-EXISTING ELEMENTS</b>			
M <sup>2</sup> building		15,713	13,600
M <sup>2</sup> active		15,434	12,743
<b>TRANSFORMATION COSTS (in millions of pesetas)</b>	<b>169</b>	<b>1,070</b>	<b>1,276</b>
Demolition		47	41
Building indemnification		169	360
Activity indemnification		586	621
Land management		120	153
Infrastructure Plan	125	132	90
Urban development of concessions for roads and green areas	44	16	11
<b>COSTS PER M<sup>2</sup> R PRIVATE EXPLOITATION</b>	<b>5,500</b>	<b>32,837</b>	<b>57,514</b>
<b>LAND RESIDUAL VALUE (Ptas m<sup>2</sup> land)</b>	<b>244,736</b>	<b>170,926</b>	<b>104,298</b>

## **ACTION PROGRAMME**

---

### **THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

AMALGAMATED TEXT

## ACTION PROGRAMME

A) The urban redevelopment of the sector in accordance with the determinations of the Special Infrastructure Plan:

The predicted time span is four years, as from the approval of the Infrastructure Plan, although the time of execution will be co-ordinated and adjusted according to the transformation operations to be developed.

B) The intervention laid down by the **MPGM**:

The City Council will draw up the development plan in maximum six months after the definitive approval of the MPGM. The Special Plans will define the scope of the management and will programme specific actions, with a deadline finely adjusted to that of four years.

C) Non-demarcated intervention:

In any case, the City Council will be able to take the initiative for new intervention via the elaboration of the corresponding Special Internal Reform Plans provided for in article 17 of the Regulations, with the application, if required, of public action systems, without detriment to the actions to promote the private sector adjusted to the defined requirements.

D) The Special Infrastructure Plan:

This will be drawn up in maximum three months after the definitive approval of the MPGM and will define the necessary management scopes to carry out its determinations.

E) The Special Plans for consolidated façades:

To be drawn up by the appropriate legal body or at the instance of the owners of each frontage.

F) Concessions in discontinuous areas:

The City Council will adopt the necessary measures to co-ordinate the execution of the plans and the actions entailed by the concession of land in discontinuous action areas, applying article 73 of the Charter of Barcelona. The admission of concessions in areas proposed by promoters is, in any case, subject to urban development rationality criteria, provided for in the planning, with a guarantee of execution and the appropriate level of service.



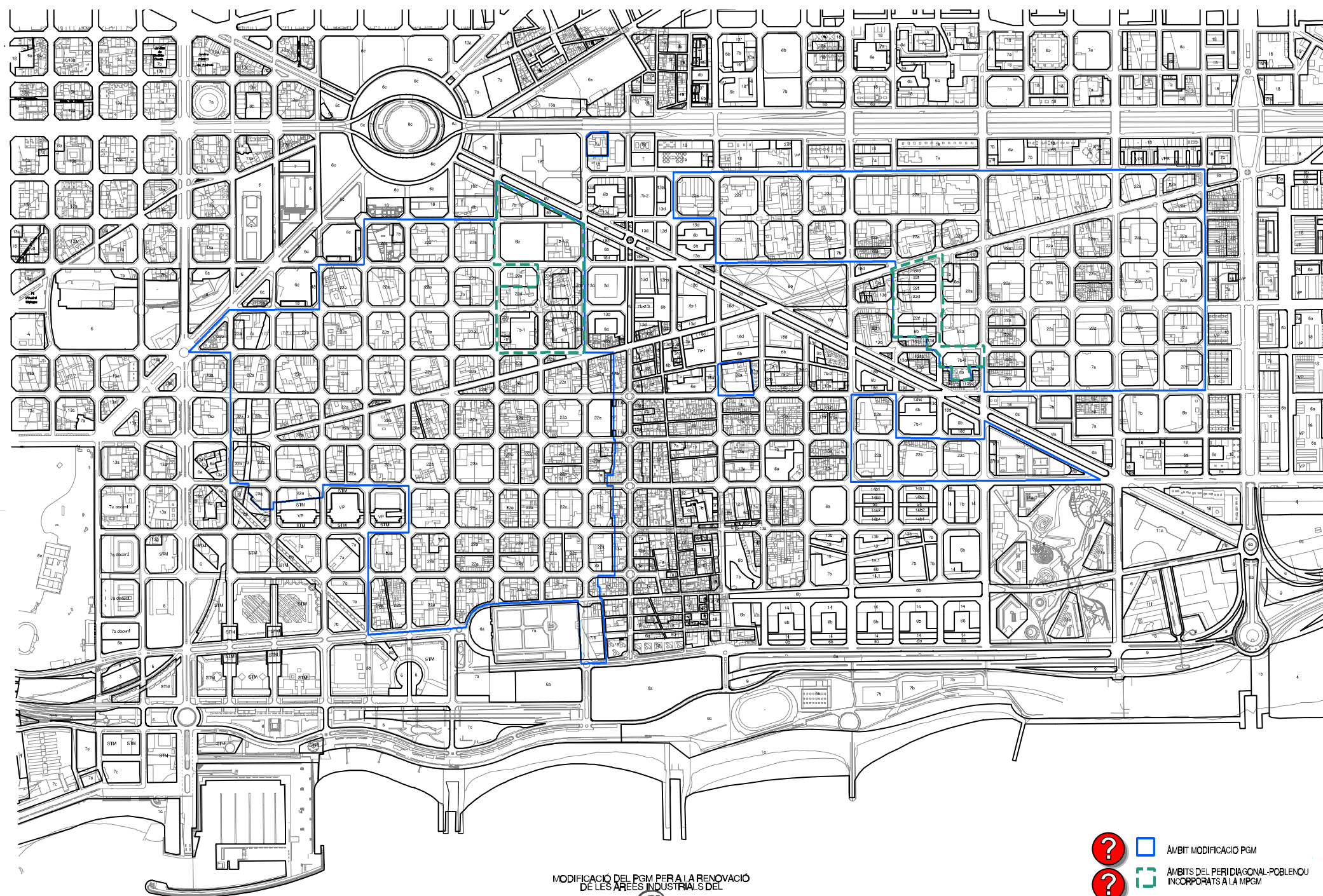
## **GRAPHIC DOCUMENTATION**

---

### **THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF THE POBLE NOU 22@BCN ACTIVITY DISTRICT**






#### **AMALGAMATED TEXT**

The definitive legal text regarding the Modification of the General Plan corresponds to the original text in Catalan.  
This document is intended to provide information only, and does not constitute a legal document.

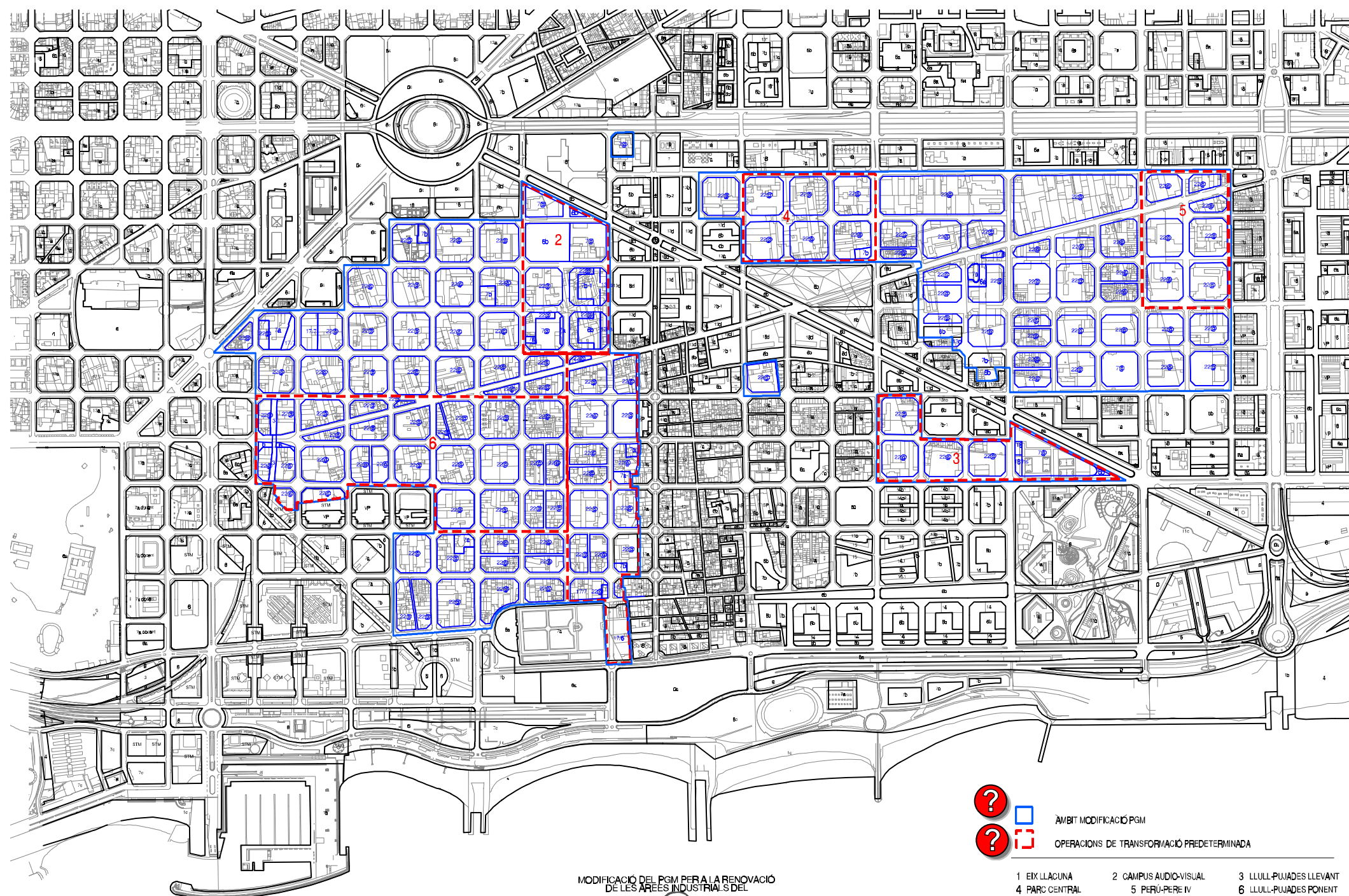


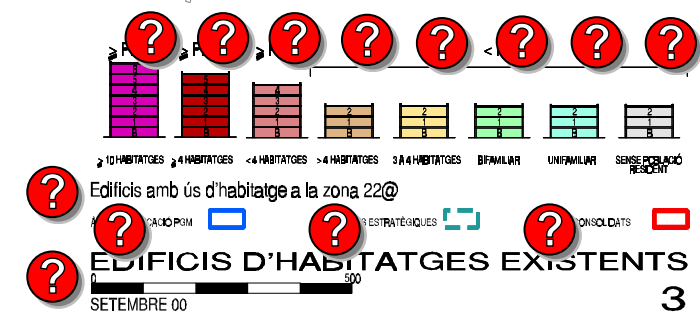
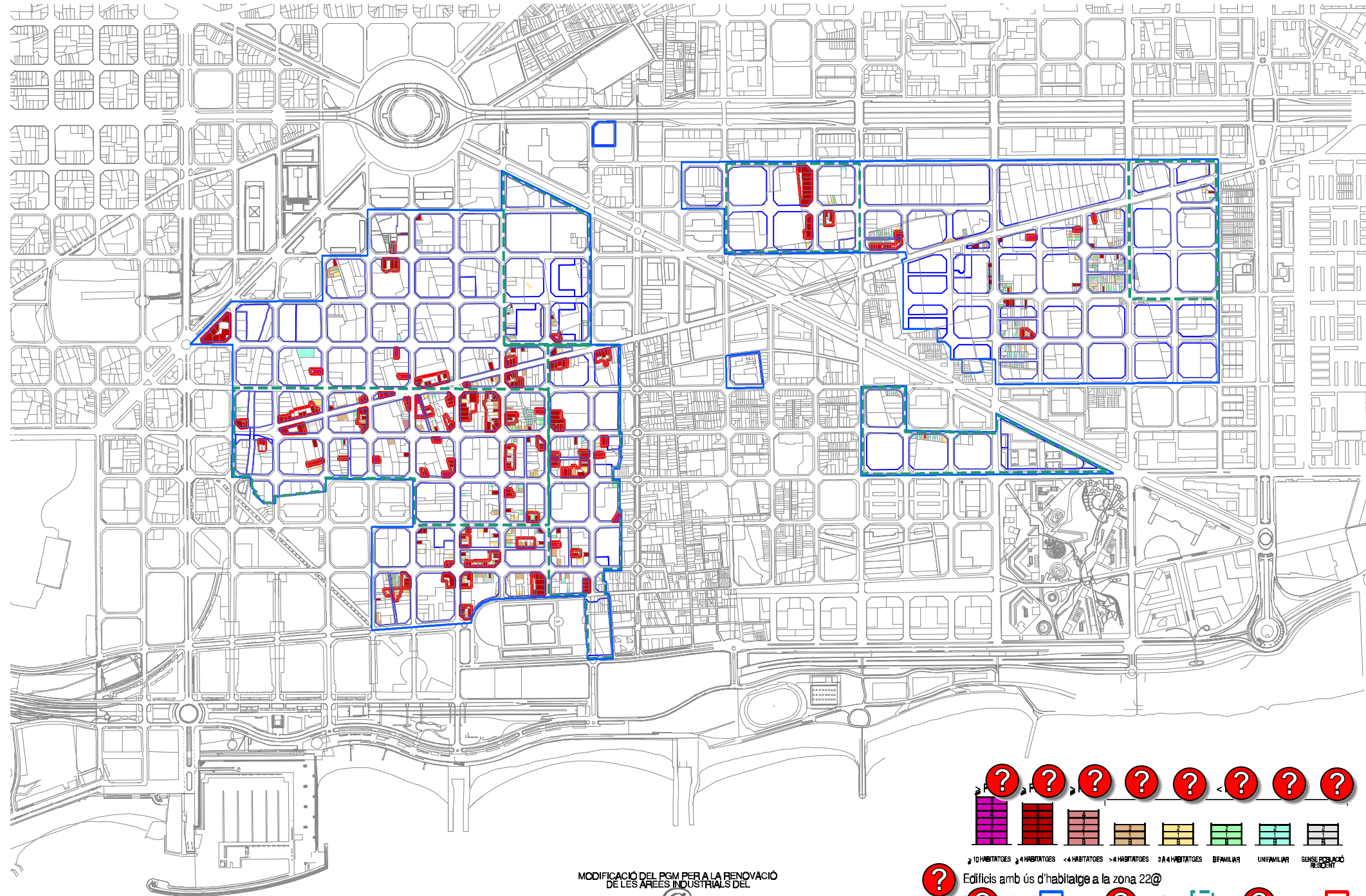
Ajuntament  de Barcelona  
 Sector d'Urbanisme  
 Direcció de Serveis de Planejament

MODIFICACIÓ DEL PGM PER A LA RENOVACIÓ  
 DE LES ÀREES INDUSTRIALS DEL  
**POBLE NOU**  
 -DISTRICTE D'ACTIVITATS 22@BCN-  
 TEXT REFÓS

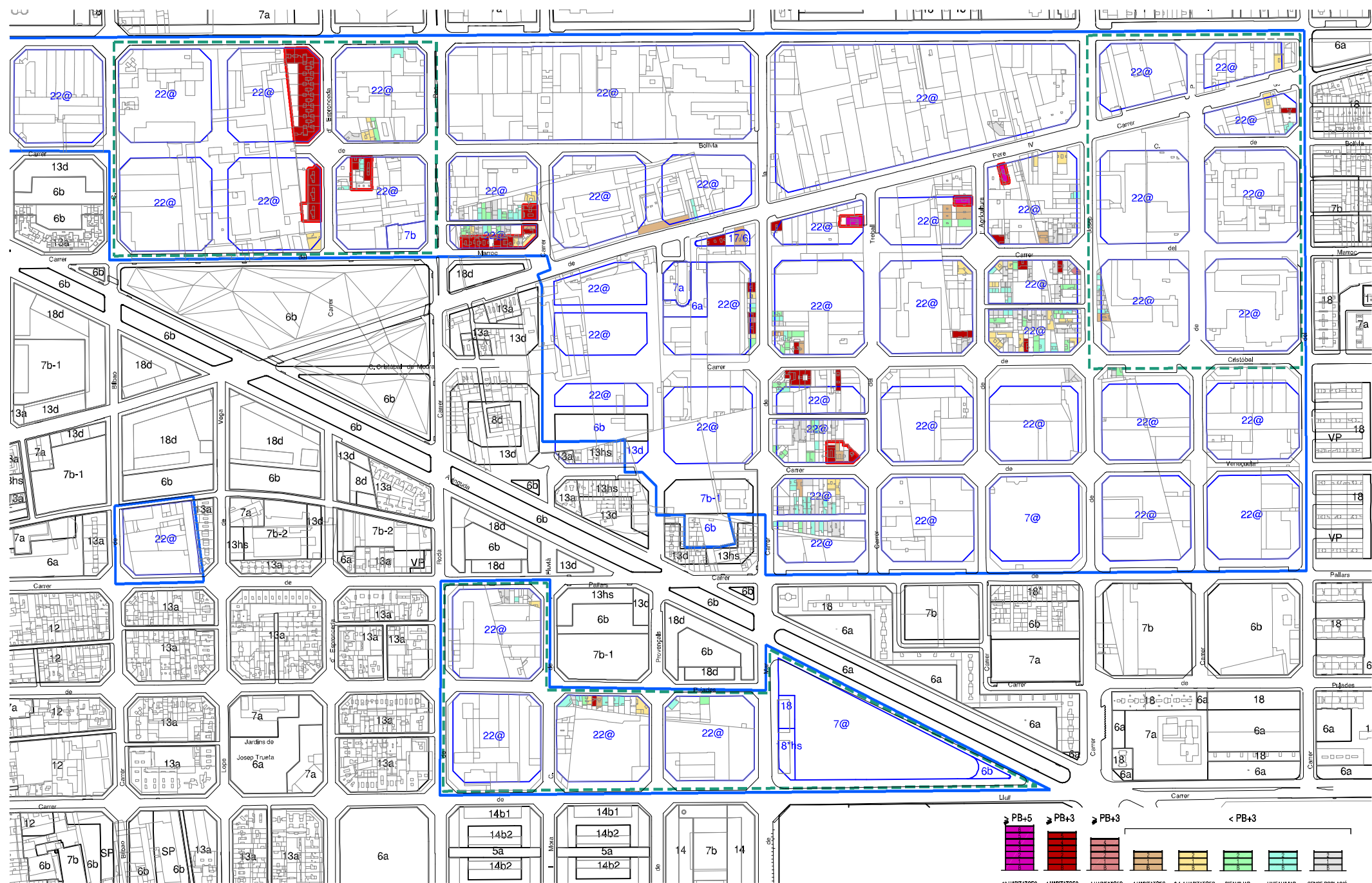
  ÀMBIT MODIFICACIÓ PGM  
  ÀMBITS DEL PERÍODIAGONAL-POBLENOU  
 INCORPORATS A LA MPM  
 PLANEJAMENT VIGENT  
 SETEMBRE 00

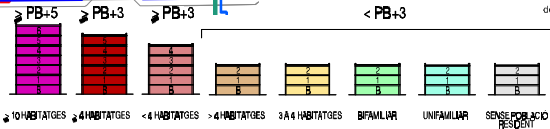












### AVBIT MODIFICACIÓ PGM

## OPÉRATIONS STRATÉGIQUES

FRONTS CONSOLIDATS

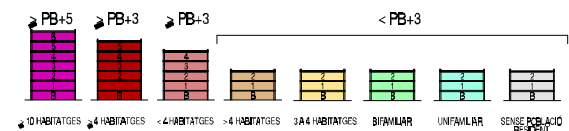
1

SETTEMBRE 00

300

## 4.2





ÀMBIT MODIFICACIÓ PGM  OPERACIONS ESTRATÈGIQUES 

**EDIFICIS D'HABITATGES EXISTENTS**

SEPTEMBRE 00 300 **4.3**

## **APPENDIX: URBAN PROCESSES AND IMPLEMENTATION OF ICT**

---

### **THE MPGM FOR THE RENOVATION OF THE INDUSTRIAL AREAS OF THE POBLE NOU 22@BCN ACTIVITY DISTRICT**

#### **AMALGAMATED TEXT**

The definitive legal text regarding the Modification of the General Plan corresponds to the original text in Catalan.  
This document is intended to provide information only, and does not constitute a legal document.



## **DIGITAL CITY STUDY**

---

### **THE NEW PRODUCTIVE SECTOR: SPACES AND ACTIVITIES**

**Catalan Institute of Technology**

## **4.1 Introduction**

In the preceding chapters we have mentioned the opportunities provided by information and communication technology (ICT), its powers of transformation and the need for new frameworks and environmental conditions as reflected in the proposal for a model Digital City.

Below we shall present a series of experiences undergone in recent years in different locations around the world. With the exception of the Italian example, they all share the common denominator of being ICT-based. Nevertheless, the selection varies greatly in each case with respect to how it functions, its understanding of and exploitation of this technology. Whilst it is also true that the circumstances surrounding the case studies make each of them practically unique and unrepeatable, certain generalised conclusions may be reached concerning the treatment of cities and ICTs in general. These conclusions will be reflected in points 4.3 and 4.4.

Besides its physical and cultural proximity, the Italian example was also chosen as an example of the restoration of an old industrial neighbourhood in Turin and its conversion into an environmental technology centre, as will be seen in the corresponding case study.

In the process of writing this chapter, as a starting point a list of experiences drawn from a series of sources was examined. The 21 cases studied were selected from this initial list. The selection criteria used were a sample intended to represent the different regions of the world as well as possible (whilst giving particular importance to Europe), the importance of each phenomenon and the degree of planning and control exerted on it.

A local correspondent or delegate who was familiar with what was really happening was sought in most of the cities. Eight of the cities were visited.

## **4.2 Case studies**

The case studies are presented in the form of files. Each file corresponds to one of the experiences analysed. The information is organised into three descriptive blocks and one general description. Elements of particular interest are included in the Appendices, which are conveniently listed in each file.

The full list of the cases studied is as follows:

- United States
  - Cyberdistrict, Boston
  - Digital Coast, Los Angeles
  - Silicon Alley, New York
  - Silicon City, Chicago
  - WebPort, Portland (Maine)
- Asia
  - Bangalore, India
  - Hyderabad, India
  - Chennai, India
  - Hsinchu, Taiwan
  - Multimedia Super Corridor, Malaysia
  - Media Valley, Incheon, Korea
  - Softopia, Gifu, Japan
- Middle East
  - Atidim Park / Matam Park, Tel-Aviv / Haifa, Israel
- Europe
  - Baden-Württemberg, Germany
  - Oulu, Finland
  - Environment Park, Turin, Italy
  - Hoxton (London), United Kingdom
  - Silicon Fen, Cambridge, United Kingdom
  - Silicon Glen, Glasgow-Edinburgh, United Kingdom
  - Electrum and Kista Science Park, Stockholm, Sweden
  - Soft Centre, Ronneby, Sweden

---

**Name:** Cyberdistrict

**Location:** Boston, Massachusetts, UNITED STATES

**Initiative:** Private, with the collaboration of the proprietor

---

## DESCRIPTION

The area of Fort Point Channel, on the side of the canal of the same name, located in the portside district of Boston, was an important centre for the wool industry and for import/export and, as a result, produced a neighbourhood with large buildings housing major warehouses and manufacturing plants.

The successive abandonment of these buildings, many of which are 100 years old or more, facilitated the arrival of a different kind of inhabitant and new activities. As a result of its low rents (\$19/foot<sup>2</sup>, as compared to the \$25 to \$34/foot<sup>2</sup> paid in other areas of the city, such as Cambridge or Highway 128, which also specialise in high technology), the area within the limits of Congress St, Summer St and Northern Av. began to house a community of designers of web pages and CD ROM's and other interactive marketing companies, attracted by the prices as well as the atmosphere in the neighbourhood and its history. This was a result of its historical appearance and the kind of spaces available (in the words of a Fort Point Channel businessman, "in our business we don't have much history, so this gives us a little cultural heritage"); its proximity to the financial area of South Station was also an influential factor. The fact that most (75%) of the buildings belonged to a single owner (Boston Wharf Co.) facilitated the process.

Once the initial core of New Media enterprises had been set up, the area began to look different. There were now more reasons for the growth of the sector to accelerate: the energy of the area, with so many people working in the same field so that "you feel like part of a group of people working on something together" and its location in the middle of a broad dense community of artists and creative people. Nothing on the web compares with running into competitors in the street or in a bar, the mixture of high technology and the old world of the docks and warehouses provides it with a unique atmosphere.

At the same time, a strong sense of community was growing that would lead to the appearance of the Cyber District, a co-operative association of companies, organisations and individuals working to encourage a standard of excellence in the interactive industry.

A total of 350 companies were calculated to be operating in the neighbourhood at the end of 1998, employing 3,500 people (according to sources within the Cyber District association). Multimedia is still the main activity, although this has encouraged the emergence of new complementary activities.

No specific planning was carried out in the area. The entire process was spontaneous, everything from the lower-than-average prices to the refurbishing of more buildings was the result of a natural process. We have no knowledge of any state or local participation. The dynamic nature of the activity promotes itself: the city council is now considering extending the underground as far as the neighbourhood and proprietors are refurbishing their buildings on the basis of the guaranteed increase in land value.

The same thing has happened with telecommunications infrastructures. Being one of the city's oldest districts, it had no infrastructure beforehand. Although the problem has not been fully solved in the neighbourhood, the extension of telecommunications infrastructures to the Cyber District was probably helped by its proximity to the financial area.

The Cyber District association was set up in 1996 to take in all of the companies existing in the area, to encourage communication and joint activities among them. In August 1997 the association included 20 companies and its mid-term aim is to turn the Sea Port district into a neighbourhood with its own style of urban development; cosmopolitan 24 hours a day, 7 days a week, where bicycles have priority over cars, with flexibility in work and living spaces. Thus, it is a promotional, enthusiastic nucleus without the participation of the administration, leading a broad-reaching generalised process.

The companies promoted the project themselves, with virtually no participation from the administration. The process of redevelopment and revaluing of the buildings in the neighbourhood has occurred totally naturally and progressively.

The Boston area is one of the major producers of R&D technology companies. Including the legendary Massachusetts Institute of Technology (MIT) on Highway 128, research has been one of the state's strongest activities and is a world reference point. Nevertheless, the process of the growth of the Cyber District has been autonomous. The technological environment has certainly influenced its new activity, but the functioning of the sector has always danced to a different tune. This means that, whilst the two sectors do not hinder one another (and can even generate their own synergy) and should not be forced to coexist, a project taking both elements into consideration could be highly beneficial.

---

**Name:** Digital Coast

**Location:** Los Angeles, California, UNITED STATES

**Initiative:** The Mayor of Los Angeles

---

## DESCRIPTION

In 1997 the mayor of Los Angeles, Richard J. Riordan, took the initiative in the New Media field. With a further series of initiatives, he intends to make the city a reference point for the whole of the United States, taking advantage of the fame and prestige the city has already achieved.

The measures taken to promote the industry are as follows:

- Cuts in taxation for multimedia companies; the council's economic promotion team began to work on the commercial aspect, attempting to attract companies by means of favourable loans, finding business locations and facilitating the obtaining of permits and licenses
- Project with the University of South California to create a an incubating programme for high technology companies
- Contracting the best services in order to install the most sophisticated fibre optics and microwave infrastructures

The promotion and management of the new industry was formalised by the creation of the 'Digital Coast Roundtable' (previously the 'Los Angeles New Media Roundtable') (August 1997). The president of the association was the mayor and among its members there were two members of the city council and 30 representatives the technology industry. Its aims are:

- To locate and define the new media industry in Los Angeles
- To participate in public and private partnerships in order to bring infrastructures and connectivity up to date
- To promote Los Angeles as the epicentre of the new media
- To aid in the development of a solid training infrastructure to feed the industry
- To promote an area of tax benefits and other amenities for the new industry
- To facilitate the existence of capital in order to support its growth
- To provide support for the organisation of an annual convention for the new media

The association exists under the auspices of the profit-free organisation 'Digital Coast Inc.'. Any company set up in Los Angeles can (and is encouraged to) place beside its company name "located in Los Angeles Digital Coast".

Among the initiatives presently being run is a study on the New Media ordered by Price Waterhouse Coopers, to identify the social and political impact of the industry in the region, identifying opportunities and obstacles for growth; a programme for studying training needs (Digital Coast Educational Partnership); and the organisation of a congress for prime risk companies, to repeated every year.

California's industrial diversity also extends to ICTs, so Internet-based new media companies are intended to develop including software, tools and utilities, databases, applications for education, entertainment and electronic mail.

Some of the most important Internet companies are to be found on the Digital Coast, such as Geocities (communities) and DoubleClick (net advertising).

It is a promotion model which, rather than being concentrated in one area, includes the entire city of Los Angeles. What is more, being such a widely spread city, the model does not fit in with urban and environmental planning schemes.

The zone is highly influenced by its proximity to Hollywood (the cinema and television industries have stakes in the web) and Silicon Valley, which provide content and technology respectively.

---

**Name:** Silicon Alley

**Location:** New York (Manhattan), New York, UNITED STATES

**Initiative:** Private with city and state support

---

## DESCRIPTION

*The zone called Silicon Alley is located on the island of Manhattan and is made up of the neighbourhoods of Soho, Flatiron District, Chelsea and East and West Village as far as 42<sup>nd</sup> Street; it extends south as far as Wall Street. Some of the people interviewed consider the zone to include everything below 24th Street.*

The neighbourhood's emergence as a digital centre evidently makes it a very special area in which various factors have taken effect, creating a synergy that would be hard to reproduce. The neighbourhood of Soho has always had a high concentration of artists, with its numerous studios and lofts. The high prices there have caused the artists to gradually move out to bordering neighbourhoods with more attainable prices, thus extending the zone. The city's crisis in the 80's caused the neighbourhoods to deteriorate. A large percentage of the space was abandoned. In 1994 CD ROM and web design companies began to concentrate in the area. The expansion of the phenomenon began in 1995; an article which appeared in "New York" magazine headed "The Cyber sixty" covered a group of 60 people working in the new sector and mentioned Silicon Alley for the first time, naming the zone in which the new digital contents industry was developing. The term was later made popular by newspapers such as the New York Times and the Wall Street Journal.

As Internet spread, the so-called New Media Industry developed ("industry based not merely on cables and codes, but also on the interactivity provided by the commercial usage of the World Wide Web"). Nevertheless, it was the large "traditional media" firms, publishers, newspapers, advertising agencies, record and film companies (traditionally set up in Madison Av.) that were to create the first new media departments. Artists and designers began to take part, setting up new companies with people who had been trained in the departments of the large firms. The final step was taken by the entrepreneurs: big business opportunities combined with relatively reduced initial capital requirements and a vast market to be exploited, led many young people to take the risk of valuing a business in Silicon Alley more highly than an MBA masters.

1997 saw the final phase of Silicon Alley's development. It went from being local in range to playing an important role in the field of Internet. The big Internet companies set themselves up there, aware that this was where it was happening: AOL, Sun, Walt Disney's web division... The Alley grabbed national and international attention as a focus for risk capital investment. Moreover, institutional support (both city and state authorities were aware of the new sector's great potential and supported it by means of favourable legislation) and the creation of new and more powerful infrastructures led it to a point at which the critical business mass was exceeded. A series of activities were undertaken to support the entire process: publications, associations and the organisation of fairs and congresses completed the efforts to reinforce the new economy.

Certain elements have favoured this extraordinary development and its dynamism:

- Silicon Alley is merely the tip of the iceberg in a far more extensive area which includes the metropolitan area of N.Y., New Jersey and the south of Connecticut (the tri-state area). Silicon Alley comprises only 26% of the area's total industry (approximately 1,500 companies). In other words, it is not an isolated area.



- The presence of the large publishing, audio-visual and advertising firms provides a very solid foundation and a constant source of resources and personnel.
- The proximity of the financial sector causes various effects: on the one hand, it injects money into the sector and brings investors together (in the words of an interviewee: "The money comes here and is finding its way to good ideas"); likewise, it facilitates the good infrastructures already present there.
- The city's own dynamism is a paradigm of the American enterprise model where doing business is easier, cheaper and virtually a moral obligation.
- The combination of creativity and speed typical of the neighbourhoods and the people who live there, and of vital importance within the new economy.

The administrative intervention in the area did not arrive until a certain degree of development had already been achieved, and when it did occur it was more focused on maintaining the expansion and taking advantage of it in order to recover deteriorated areas. The programmes centred on tax reductions and access to cheap land. The target area of this support was clearly demarcated. Assistance was also provided for businesses and easy access to information and human resources. Nevertheless, no efforts have been made to regulate the sector or the space it occupies.

The infrastructures are all private investments. Instead of a single operator, there are numerous ones, each specialised in one kind of service (cable, local voice, federal or international, internet). The experience of the Plug 'n' go buildings, prepared to house rapid access to Internet and the local web. Wall Street has greatly favoured the existence of a powerful telecommunications network. It would be useful to know if there is any legislation aimed at preparing the streets to receive the installations of the companies.

Silicon Alley is a typically urban process. The activity carried out there is, by definition, more decision than production-orientated. It is a clean industry that has no special requirements apart from the bandwidth facilitated by its location.

---

**Name:** Silicon City

**Location:** Chicago, Illinois, UNITED STATES

**Initiative:** Sector (private)

---

## DESCRIPTION

We shall now consider a different model to those of Boston and New York. Here, the development of companies related to information technology has arrived via the evolution of the electronic and computer industries strongly rooted in the area. Notwithstanding this, the public and private sectors have also encouraged the sector in one way or another.

The state of Illinois, and in particular the area of Greater Chicago, has traditionally been a very significant location for the large computer companies. Their importance has recently extended to information technology.

The City Council and the 'Chicago Research and Planning Group' (CRPG) have put forward different public and private proposals to direct and promote the setting up of new companies based on information technology. The lack of co-ordination between the private and public sectors is a weak point in the Chicago model.

The CRPG is a profit-free association which brings together CIOs (Chief Information Officers, in charge of company information systems) from the Chicago area in order to deal with requirements for common training needs, hard and software standards, community integration, determining of objectives, budget restrictions, the increasing dependence on computer services within companies and other matters.

The City Council put the construction of the first "IT building" out to tender in January '98. The idea, as explained in its introduction, was to follow the example of other cities (it mentions "Silicon Alley, Cyber District, and Technology Gulch") and to erect buildings with rapid communication services in order to attract emerging and established companies. The CRPGs aim is to create a building (initially called the Hi-Tech District, before being renamed Silicon City) in which to bring together ICT market supply and demand.

The mayor of Chicago and the department of planning and development issued a *"REQUEST FOR PROPOSALS For the Redevelopment or the Development of the City of Chicago's first Information Technology Building"*. Its aim was to achieve "24-hour live-work" along the lines of New York's Silicon Alley. The location factors were linked to proximity with like, similar or complementary companies, availability of personnel, proximity to training centres and residential areas, security, 24-hour ease of access, pleasant environment with possibilities for expansion and a powerful telecommunications infrastructure. The aim was to make the building the centre of the new information technology industries. The city of Chicago would provide amenities for businesses setting up there. An example is Tax Increment Financing (TIF); when a company is located within a TIF district it becomes eligible for occasional tax reductions, low interest credit and tax savings on energy, among other advantages.

Likewise, the CRPG launched a proposal for a Technological District, with the intention of offering:

- 1) Links between the various agents in the IT market (particularly between supply and demand but also among laboratories, universities and professional services)
- 2) Making existing base resources accessible
- 3) Ensuring long-term growth

The elements to be achieved were:

- 1) “Concierge Service” by means of which the CRPG intends to provide technological resources for companies and professionals, making use of the advantages of economies of scale. These resources are: information resources and support and technology services. This includes a Virtual Community to bring together the various members.
- 2) A risk capital fund
- 3) The construction of a building measuring 1,000,000 square feet (over 90,000 m<sup>2</sup>) to serve as a centre for the new network and symbol of the new technological industry. The CRPG will act as a mainstay.

The plan is divided into phases. The first phase will be used to link the professional community, the second to guarantee long-term growth and the third to differentiate Chicago. The plan defines indicators by which to gauge the success or failure of the project.

The idea of “Silicon City” began at the end of 1996, when 10 CIOs discussed the need for a portal exclusively dedicated to CIOs. Almost at the same time, the “Chicago Department of Planning Development” requested the CRPG to develop the technological district. Following this coincidence the idea developed further when put into practice.

Although the term “Silicon City” was initially assigned to the virtual community (within the Concierge Service), its scope extended and began to be used for both the virtual and physical community. Its mission is to serve as a virtual business community, a channel for trade and a base for small and large companies related to or based on information technology located in Chicago. In order to do so, specific objectives were established: to serve as a link between entrepreneurs and capital and between business and the extended virtual community, including various communities classified vertically, by function or by geographical location.

Telecommunications infrastructures are highly developed as a result of the competition between different companies, as well as being very diverse in terms of products offered. Although there is no Special Plan to bring the area up to par with particularly powerful networks, the dynamism of the market has been enough to bring about the situation on its own.

In terms of employment, Chicago is the fourth city in the IT sector (188,720), with a net growth last year of 20,000 people.

---

**Name:** Web Port

**Location:** Portland, Maine, UNITED STATES

**Initiative:** Private

---

## DESCRIPTION

Portland is a small city on the coast of the United States with an important legacy of traditional industries (textiles, factories, agriculture and fishing, among others) that have gradually closed down as production has moved to other areas and countries. Proximity to Boston and its full area of influence contributed to the appearance of WebPort by attracting people to ICT-related jobs. "WebPort Foundation" is a mixed foundation, the aim of which is to set up infrastructures and help entrepreneurs to create their own Internet-related companies. It also includes companies that produce information technology hardware and microtechnology in general.

Among the arguments put forward by the Foundation for promoting this kind of productive activity are the following:

- Because the industrial legacy in Maine is faced with increasing closures and environmental restrictions
- Because small businesses in the information technology sector are better prepared for economic ups and downs than larger ones
- Because high technology jobs are better paid and are increasing significantly all around the world
- Because, besides being an elite holiday centre, Maine is a dynamic state throughout the year

Various organisations that provide economic, business and technical support collaborate with WebPort:

- **Economic:** the Portland Economic Development Centre carries out market research, provides assistance in locating spaces, training, legal advice; the Maine Chamber of Commerce; Maine Chamber and Business Alliance; Maine International Trade Centre
- **Access to capital:** private risk capital companies; public companies such as the Finance Authority of Maine's (FAME) Enterprise Growth Fund
- **Technological support:** Maine Software Developer's Association, Maine Telecommunications User's Group, Center for Technology Transfer's and others

All of these organisations have either been created to meet certain needs that have arisen from the Web Port project, or they already existed and have begun to collaborate with the foundation due to common interest.

There are various state aid programs, noteworthy among which is one for the creation of high technology companies (High Technology Tax Credit, for the purchase or leasing of equipment or telecommunications and computer components, for companies involved in high technology sectors) and another for R&D (R&D Super Credit which finances up to 50% of company R&D investments).

Portland is a small community whose activity was based on traditional industry and tourism. WebPort has caused the most obsolete industrial sectors to be renovated and has provided a year-round alternative to summer tourism. One of the factors on which the promotion is based is the good standard of living, confirmed by the tradition of tourism. The project is not based on a large programme nor is it located in one particular place; rather, it is a commitment among various institutions that are able in one way or another to collaborate in order to promote the new sector of activity.

---

**Name:** Bangalore

**Location:** Bangalore, Karnataka, India

**Initiative:** Mixed

---

## DESCRIPTION

**Karnataka is one of India's most advanced states. It has a flourishing traditional sector (which produces 70% of the silk and coffee there and is famous for its sandalwood production). What is more, it is a historical centre of trade and a favourite place to retire for Hindu royalty and British colonial leaders. It is also characterised by its dedication to training, with over 100 R&D centres, among which the Indian Institute of Science is noteworthy.**

The state has also led the development of information technology in the country. The Karnataka State Electronics Development Corporation Ltd (KEONICS) was founded in 1976 in order to develop the electronic sector. Between them, the Information Technology Park and the Software Technology Park, both located in Bangalore, have an area of nearly 700,000 m<sup>2</sup>, to which 133 hectares must be added when including the new Electronic City project. The priorities for information technology require (in terms of state policy) the following factors:

- Giving priority to the development of IT, placing all of the government establishments on the network
- Computerising governmental operations
- Providing assistance and concessions for IT businesses, such as government purchasing of shares from small and medium-sized companies
- Reduction of credit interest for IT
- Facilitating access to "seed capital" and risk capital
- Considering software establishments as energy consumers rather than "commercial usage", thus providing them with special priorities and rates
- Tax exceptions on final products and on the purchase of hardware manufactured in the country

The traditional emphasis on engineering has led to the formation of 71 technological schools, 30 of which are located in Bangalore. The first "Institute of Information Technology" began to operate last January (1999), with a 2 million dollar contribution from the government of Karnataka and 10 million dollars from the IT industry. Steps have been taken to promote partnerships with software giants such as Microsoft and Oracle, in order to focus training on their software.

Following the independence of the central government Bangalore was selected for the installation of high tech industries (electronics, aviation, biotechnology, machine tools, among others). Bangalore therefore houses the headquarters of important public and private companies (Hindustan Aeronautics Ltd., Bharat Electronics, Ltd., Indian Telephone Industries, among others).

Whilst the headquarters of many hardware companies are located in Bangalore, the industry's main pillar is software. The city and its surrounding areas (with approximately 5 million inhabitants) is home to 230 of the 1,000 top software companies in the country, as well as to multinationals including Novell, Verifone, Oracle and Philips and India's historically most successful firm: Infosys.

When Texas Instruments decided to found a research and development centre in Bangalore in 1985, the Indian government took a radical step forward by permitting the exportation of software via satellite communications. When they became aware of the software industry's potential, the Department of Electronics aided its development by means of the "Software Technology Park Scheme" (see Appendix no. 2). Bangalore's

STP was founded in 1991, laying the foundations for the software industry. Today it houses more high technology companies than anywhere else in the country. It includes 17 firms involved in integrated circuit design, 343 in communications, 51 in operating systems and 119 in general software. The STP is in charge of 57% of the total software export (of STP), with accumulated investments of approximately 600 million dollars, and employs 30,000 professionals. 45 new firms began to operate during the period 97-98.

A second STP is presently being built with government financing together with the collaboration of a private firm, which will provide telecommunications services (a 64 KB network and Internet connections).

Besides the STP, there are other platforms for the promotion of businesses and exportation such as the International Technology Park, which has an area of 13 hectares developed by the state government (20%), together with TATA (40%) and a business consortium in Singapore (40%). Other examples are Electronic City, with an area of 150 hectares, and the Export Promotion Industrial Park.

Foreseeing the need for an initial single information point, the Karnataka Udyog Mitra (KUM) was established. It was promoted by the government together with other state development agencies. KUM was created to aid entrepreneurs, multinationals and new firms with information services and other services such as the identification of investment opportunities and business constitution guidance.

The downside of the growth resulting from the information technology explosion is that between 1981 and 1998 the population has doubled, going from 2.4 million to 5 million people. The infrastructures are overloaded and contamination is very high despite the fact that the establishment of heavy industry was prohibited years ago.

---

**Name:** Hi-Tec City

**Location:** Hyderabad, Andhra Pradesh, India

**Initiative:** Public

---

## DESCRIPTION

The state of Andhra Pradesh has always been a privileged location for public industry, as well as for research institutions and organisations. Other sources of state income are its natural resources and agriculture.

IT has made a strong entrance in Hyderabad, capital of the state, going from a turnover of 0.95 million dollars in 1992 to 65 million in the 1997-98 period. Companies have specialised in network management software and client-server applications, multimedia solutions Internet applications, CAD-CAM and telecommunications software.

The Hyderabad STP was opened in 1992 and has provided the state with a spectacular increase in software exports (143 million dollars in 1998). Companies such as Microsoft, Oracle and Motorola have headquarters within the park. The amenities available in the park include help with exportation, tax reductions, the possibility of 100% foreign capital and reductions for the purchase of national computer equipment. The park's infrastructures include accommodation amenities, high-speed connections, video-conferencing and training amenities for the companies established there.

The idea for the Hyderabad Information Technology and Engineering Consultancy (Hi-Tec City) was also put forward in 1992. It is a city designed as a technology park, with all the infrastructures required both in terms of living standards and business and technological development. Its purpose is to provide support for the production and engineering of software, hardware and financial services.

The project is promoted by L&T Infocity Ltd., a joint venture, 89% of which is owned by L&T and 11% by Andhra Pradesh Industrial Infrastructure Corporation (APIIC), a public company, which has provided the land (63 hectares) in Madhapur, among the neighbourhoods in the east of Hyderabad.

Some of the amenities incorporated into the Hi-Tec City are as follows:

- Reliable electricity supply
- High-speed connections
- Made-to-measure production areas
- Satellite transmission station
- Internet and intranet amenities
- Video-conferencing

The state itself has reserved space in which to install public centres. The first phase, called "Cyber Towers" is comprised of a 120-module construction of pleasant characteristics, with attainable prices and amenities for entrepreneurs wishing to set themselves up there. The second phase will be carried out over the next three years and several companies, including various European (Baan) and American ones, have already begun to work in their software development centres. Large multinationals such as Microsoft, Metamor and Oracle have reserved land there. The first phase is expected to employ approximately 2,000 professionals over the next two years.

Hi-Tec City is a complex including the full range of technical, logistic and social support required for the development of information technology companies. Located in the green outskirts of Hyderabad, it will have hotels, leisure centres, public transport and all of the amenities of a modern city.

---

**Name:** Chennai – STP

**Location:** Chennai, Trival Nadu, India

**Initiative:** Public

---

## DESCRIPTION

Located in south of the country, the state of Tamil Nadu is going to great lengths to form part of India's technological revolution. Although Chennai and the surrounding area are responsible for only 8-9% of the country's total software exports, its potential for growth is considerable, as may be seen in the large number of initiatives emerging there.

In November 1997 the government issued a document stating its IT policies, stressing the following incentives:

- Subsidies for software firms set up with local capital
- The creation of four new IT parks in association with the private sector
- The setting up of a risk capital fund of the IT industry
- Similar treatment for private and public technology parks

The policies have been formulated in order to obtain an average growth rate of 30% by the beginning of the millennium. In order to do so, Chennai is already strong in software, hardware, peripherals and training. On the subject of training, the city of Chennai has 19 universities, 92 technical schools and 133 polytechnics that produce 12,000 computer-related engineers per year.

Four initiatives are of particular interest:

- The Golden Cyber Triangle set up in collaboration with the public company, Electronic Corporation of Tamil Nadu (Elcot), and the private sector. Large companies have already reserved spaces there (Alcatel, Infosys Technologies, Future Software and Wipro). A joint venture established between Elcot and Tamil Nadu Development Corporation (TIDCO) has also reserved land.
- The Cyber City Project, an area of land reserved at competitive prices, also located in Chennai, with energy and telecommunications infrastructures and access amenities. Leasing agreements for investors will be for 99 years.
- Infosys Technologies Ltd. is making investments in a private campus near Chennai. The campus is designed to take 1,000 people and will be finished at the end of 1999.
- TidelPark, developed for the joint venture between TIDCO and ELCOT, will be available for users in January 2000. The main building, which is already under construction, is comprised of three towers, each with an area of 8,000 m<sup>2</sup>.

The government is also placing special emphasis on Internet, encouraging its extension in Chennai itself as well as in all of the cities in the state. Significant efforts are also being made to computerise the government establishments.

To summarise, the state and municipality of Chennai are taking advantage of their potential, particularly in terms of the workforce (training is one of the state's strong points) and infrastructures, in order to start up a whole series of public and private initiatives in order to be able to absorb the inertia of software exports. The different projects are not interconnected, which could make the project as a whole chaotic or cause infrastructures to become saturated if expectations are exceeded, as in Bangalore.



---

**Name:** Hsinchu Science-Based Industrial Park (HSBIP)

**Location:** Hsinchu, Taiwan

**Initiative:** Public

---

## DESCRIPTION

Taiwan is the third largest producer of technology after the United States and Japan, and is expected to produce 42,000 million dollars in 1999. The state minister attributes this success to the following factors: the balanced growth of the various developments (high, medium and low), the availability of professional technicians and R&D, the influence of entrepreneurs leaving the country and the existence of the Hsinchu Science-Based Industrial Park.

The HSBIP opened in December 1980. Over the next 19 years the government invested as much as 600 million dollars in infrastructure and the four extension plans have enlarged it to its present 600 hectares. It is located 15 minutes away from the centre of the city of Hsinchu and is divided into industrial, residential, leisure and research areas. Environmental conservation is one of the factors that has been given most attention, and many of its factories have already obtained ISO 14.000.

The number of companies set up there reached 245 (43 foreign and 202 national) in 1997 and fall into six categories: integrated circuits, computers and peripherals, telecommunications, optoelectronics, machinery and precision and biotechnology materials. The semiconductors industry is most characteristic in the park, and is the world's fourth biggest producer. Combined investments already add up to 13,000 million dollars. 25 of the companies have made public share offers in the past, indicating the success of the project. The park employs 68,410 people, 31.8% of which are university members.

The park's administration is run by the Executive Yuan's National Science Council (public) and deals with planning, investments, human resources, information networks, environmental protection, social and medical services, emergencies and security.

The park has also benefited from the government's "National Information Infrastructure" (NII) plan, which has enabled a network with ATM technology and broad bandwidth. There are certain specific applications such as video conferencing and distance learning.

After the liberalisation of telecommunications, expected to take place in 2001, the extension of Internet (expected to reach 3,000,000 users in 2000), and when the discontinuity in training has been dealt with (in other words, when the park produces its first qualified personnel), the park may undergo a further change as it focuses on research and development and more intangible products (software and services), thus freeing it to a degree from its dependence standard large-scale production.

The Hsinchu Science-Based Industrial Park is designed for the large-scale industrial production of electronic components, computers and telecommunications. The idea was to create a city on the basis of the requirements of the industry. Whilst the standard of living and the environment were factors in its construction, it was designed principally for production, in order to take advantage of the country's competitive advantages. Although it is similar to the Silicon Valley model in terms of size and setting, it differs in its activities.

---

**Name:** Malaysia Multimedia Super Corridor

**Location:** Kuala Lumpur, Malaysia

**Initiative:** Public

---

## DESCRIPTION

The Malaysia Multimedia Super Corridor will occupy an area of 750 Km<sup>2</sup>, from the centre of Kuala Lumpur (starting from Asia's highest building, the twin towers) to the international airport, the largest in the continent. The project includes a new administrative capital, Putrajaya, which will house a "paperless" government; an intelligent city called Cyberjaya; two "telesuburbs", a technology park, a multimedia university and a "park for the protection of intellectual property".

The project was designed directly by the government of Malaysia, which intends to invest over 40,000 million dollars in the area. One of the first problems it must deal with is convincing foreign companies to set up there, many of whom see the location as being more suitable for their distribution and support centres than for the development of new products.

In order to overcome this obstacle, the Prime Minister has formed an initiative called the "International Advisory Panel" including the presidents of companies such as Microsoft, IBM, Apple, Sun Microsystems, Oracle and Motorola. Of course, not all of the presidents can attend the meetings nor have they guaranteed their presence at the MSC. Others have done so, however, such as Sun, who have established a "competency centre" for their Internet programming language, Java. The local telephone company, Telkom Malaysia, is working on a fibre optic network in order to promote the advanced telecommunications corridor.

Another problem to be dealt with by the project is the lack of qualified personnel, hence one of the measures taken (extraordinary in the particular case of Malaysia) being that of free access to foreign employees. Another of its advantages will be certain tax reductions over a period of ten years.

The MSC has established certain technologies to act as flagships for the activity being generated. These technologies are telemedicine, distance learning, electronic government, intelligent credit cards and remote control manufacturing.

The project will be arranged into three phases:

- The aim of the first phase is to develop the infrastructures, attract a group of world leading companies, launch 7 star or flagship applications, start up a framework for cyber-law and establish Putrajaya and Cyberjaya as top class intelligent cities.
- The second phase will involve other cities around Malaysia and the rest of the world, linking them with the MSC in order to form a web of technological corridors.
- For the third phase, Malaysia is expected to become a knowledge-based society. The cluster of cities formed is to be the foundation for an International Cybercourt of Justice.

Private investment will be used to finance the MSC. The government's only role has been to attract investment and provide the initial loan as "start-up" capital.

In January 1998, 180 companies had asked to participate in the MSC, of which 35% were local, 26% joint ventures between local and foreign parties and the remainder from Europe, the United States, Japan and the rest of southeast Asia. Of the 103 approved companies, 78 have begun operations and will be setting up in Cyberjaya at

the end of 1998 when the first phase has been completed.

A series of indicators have been established in order to gauge the success of the initiative. The corporate indicators include the names of leading companies that have decided to use the MSC as their base in Asia, the value of R&D and the added value of the companies established in the MSC, the quality of the associations and joint-ventures of the companies formed in order to expand globally.

It is hard to form an opinion on the matter without even having visited the area or checked on its success a year after the project began. Nevertheless, certain inconveniences can be foreseen, such as the standard of living and degree of freedom the country can provide. As a columnist wrote, MSC can only exist with a wall around it... and that would appear to be difficult in the Internet era. That is why the project may look like the Asian dream of an authoritarian Prime Minister given to megalomania.

---

**Name:** Media Valley

**Location:** Incheon, Korea

**Initiative:** Private with public funding

---

## DESCRIPTION

The final Asian initiative we studied was advocated by the Korean president KimDae-Jung himself, who did not hesitate to visit Silicon Valley's Stanford University in order to promote and attract investment for the project. Incheon is located in the west of Seoul and the initiative is intended to turn it into north-east Asia's Silicon Valley.

The project's history goes back to December 1993, when the "National Committee for the Increasing of Competitiveness", an organisation created together with five of Korea's most powerful economic associations, (Korean Industries Federation, the Korean Chamber of Commerce and Industry, the Federation of Korean Employees and the Trade Association). In December 1995, the above mentioned committee published "A Comprehensive Plan For An Information Society" which announced Media Valley as one of the key actions for the plan. The Media Valley Management Committee was formed in May '96, comprised of 18 members representing the ICT sector (including the presidents of IBM and Microsoft Korea). The city of Incheon was selected and "Media Valley Inc." was established in 1996.

The form of interaction between Media Valley and the city of Incheon was presented in a document titled "The Mutual Bill of Guarantee" wherein the municipality promises to provide amenities for the purchase of land and participation in part of the investment in exchange for the development entailed by the project. Likewise, the Korean government promised to provide financial support for the construction of the infrastructures.

Private corporations lead the initiative with the support of the central and local governments, particularly in promotion-related work.

The zone will initially take up an area of 350 hectares, and with successive additions will extend to 4,290 hectares for national and foreign software-based companies. According to the park's advertising, "Media Valley will be the birthplace of countless success stories in the information technology sector thanks to an initiative for an innovative business atmosphere, high quality services and support".

Its aim is to have attracted 2,100 companies by 2005, employing over 58,000 professionals and generating a volume of sales of 10,000 million dollars, 1.5 of which coming from exports.

The agenda requires its construction to be completed by the end of 1999 and the infrastructures completed in 2000. The first investment phase, taking place between 2001 and 2005, will involve developing risk capital and support companies and the arrival of national and international companies. The second phase, spanning 2006 to 2010, will entail the promotion and consolidation of Media Valley as north-east Asia's information and logistics centre.

For the meantime, 350 companies have already requested permission to operate in the area, of which 20 are foreign (including Intel, which has promised to build an R&D centre and an additional investment of 700,000 dollars, the maximum figure allowed for foreign firms; SAP, Motorola, Cisco Systems, Hewlett-Packard and Sun). In order not to impede the growth of these companies, KOSDAQ investment limits, the Korean equivalent of America's NASDAQ, have been eliminated.

Universities and technical centres are also to be set up in order to be able to deal with the high demand for personnel that will arise.

The private model is interesting in combination with the public sector's dedication to deal with institutional promotion tasks and provide funding for infrastructures. The project is Asian in size, which shows how much initiative the countries in the continent focus on this sector.

---

**Name:** Softopia – VR Techno Japan

**Location:** Gifu, Japan

**Initiative:** Public

---

## DESCRIPTION

The region of Gifu is located in the centre of the main island in the Japanese archipelago. It has a population of 2,100,000 inhabitants.

The idea of building Softopia was a product of the region's analysis of the industrial sector. Most of the industrial firms are subcontracted to the large Japanese conglomerates. There is a lack of creative functions within the chain of values, such as planning, management and R&D. Moreover, traditional industries are steadily disappearing (wood, textiles, ceramics) suffering the consequences of globalisation as a result of the more competitive prices of other countries in the area. These industries employed many locals in the past. The above factors are aggravated by the attraction exerted by the region of Tokyo and the difficulties of reversing this trend.

Given the above perspectives, the region decided to create a pleasant local environment that would encourage activities with increased added value. However, that cannot be done (according to the explanations of the local authorities) by following the old policies of building infrastructures or industry parks. It is necessary to boost human resource training policies and the exchange of key information functions. The concept lying behind this strategy is the “Jo-Jo”, a Japanese term for a society that applies knowledge to knowledge, as opposed to the “No-Jo” (agricultural society) and the “Ko-Jo” (industrial society).

The strategy must be aimed at achieving an atmosphere that combines the four key elements: communication, collaboration, competition and creation. Likewise, the initiative is clearly committed to the technologies of the 21<sup>st</sup> century and, given the need to specialise, Gifu's emphasis will be placed on virtual reality technology and image-related software. The document listing the principles of the new development is called the Industrial Computerisation Strategy.

Softopia holds a strategic position within the document. Softopia Japan is a research centre comprised of a central building and an extension. Its main function will be to provide space for R&D, training and assistance for new businesses. The central building, which was completed in February '98, has a useful surface area of 35,900 m<sup>2</sup>. Thirty companies have rented 32 of the areas designated for R&D, and 20 firms have set up in the spaces being built. Besides the above, an area of 51,200 m<sup>2</sup> has been taken up by various companies around the main building. A total of 1,100 software engineers are developing new technology and products.

Softopia Japan is also backed by the Japanese Ministry of the Interior. It receives financial aid from state departments and local taxation. Gifu has invested 35,000 million yen (over 4 billion pesetas) on the planning, construction and setting up of the project. The state government provides no further assistance, control or monitoring. Softopia finances most of its own annual budget.

Softopia lies within an area called the “Gifu Advanced Information Hub Area”, which includes a research institute for elementary particles, an astronomy observatory and research centres for medicine, the environment, biochemistry, materials, VR Techno Japan and others.

VR Techno Japan's activities are focused on virtual reality applied to a wide variety of fields, including manufacturing, design, construction, education, the arts and leisure.

VR's functioning is similar to that of Softopia and it is located in a building completed at the end of last year which has an area of 11,500 m<sup>2</sup>.

One of the amenities available for companies at the two centres is the open laboratories that belong to the region of Gifu, which it rents at low rates. The main beneficiaries are small firms that cannot afford excessive expenditure on equipment and installations.

The region's plan is completed with a series of projects for its computerisation:

- Information highway in Gifu
- Intelligent transport system (ITS)
- Geographical information system (GIS)
- Intelligent cards (IC Card)
- E-business
- Electronic archives

Following the initial assessment of the programme underway, the conclusions of the administrators are positive, although they do point out certain negative aspects. On the one hand, there is the crisis that affected Japan in 1998 and on the other, the lack of an adequate R&D centre. Whilst the former point is part of the present global situation and factors that are hard to control, the latter is a local problem. In order to deal with it, an Industrial Information Technology Research Institute is to be opened in April 1999, and actions are being planned to enable researchers to be trained to work on research projects. These actions include agreements with various foreign universities, research organisations and private firms.

---

**Name:** Atidim Park

**Location:** Tel-Aviv, Israel

**Initiative:** Public

---

## **DESCRIPTION**

Located in an area north of Tel-Aviv measuring nearly 10 hectares, Atidim Park is a municipal initiative set out to attract investments for high technology. Created in 1972, by 1997 it had constructed an area of 7,500 m<sup>2</sup> in the form of 11 buildings housing 85 companies and employing 3,500 people.

That year (1997) the decision was taken to extend the area by a further 6,500 m<sup>2</sup>. Expectations generated by the new information technologies enabled the area constructed to be practically doubled. The new building to be erected is the 19-floor Atidim Tower, equipped with all of the infrastructures needed to provide optimum working conditions. The aim is to fill the building with technological firms. The novelty with respect to previous investments is that other professional services for companies will also be provided.

The owners of the buildings are the local authority and the University of Tel-Aviv. Over 100 million dollars were invested in the previous extension.

Atidim Park is a combination of technology park and office area. The publicity for the new tower gives equal mention to the infrastructures and working conditions and living standards as well as its 24-hour, 365-day functioning.

There are many other initiatives for research and development parks in Israel. Among these, the most important one is that of Matam Park, on the outskirts of Haifa. Matam Park houses 45 high technology companies (including Microsoft) and employs 4,500 professionals. It includes heat/cooling circuits and common infrastructures for the entire park. Like Atidim, it is owned by the local authorities that run it via the MTM-Scientific Industries Centre Haifa Ltd., responsible for seeking investments and handling promotion.

The increasing amount of research in Israel is often boosted by the military industry (somewhat like Silicon Valley). Moreover, the 90's witnessed a massive wave of immigration of Jews from the ex-soviet republics, including important scientists with a great deal of theoretical know-how.

Extensive military training has been very influential on some of the companies. The creators of Compugen, manufacturers of software which enables the simulation of bases for coupling in order to form DNA and research new drugs, had completed their military service programming for the Israeli army.

In spite of Matam Park volume, research is focused more around the outskirts of Tel-Aviv as a result of the flexibility of working hours there. The establishment of risk capital has also begun to develop around Internet-related companies. Mirabilis developed an advanced programme for managing electronic mail that was acquired by the American firm America Online for 287 million dollars. The average age of the programmers working there is 24 years old.

The development of the Internet sector has been rewarded by the celebration of the Internet World '97 exhibition in Jerusalem. Israel is the world's fifth-ranking country in terms of Internet penetration.



---

**Name:** Baden – Württemberg medi@

**Location:** Baden - Württemberg, Germany

**Initiative:** Public

---

## DESCRIPTION

Baden-Württemberg is a state located in the south east of Germany whose capital is Stuttgart. It houses 13% of the population of Germany. It is considered to be one of Europe's most heavily industrialised areas, one of its four main engines. It is home to the central headquarters of the large German corporations such as Mercedes, Bosch, Porsche and Carl Zeiss.

Although the mechanical/electrical engineering and vehicle construction industries play a very important role, excellent infrastructure and favourable industrial policies have encouraged the emergence of the industry of new technologies such as virtual reality and biotechnology. According to Eurostat, Baden-Württemberg has Europe's top percentage of employment in high technology: 17.3%.

As indicated by the number of servers, its telecommunications network and the number of housing reached by cable, southeast Germany is highly developed area. The public network among official buildings is mob/sec, and that of the university (one of the most highly developed in the country) ranges from 2 to 155Mb/sec. More than half of the companies have access to Internet (30% in the rest of Germany). 43% of the population use computers and 10% are connected to the Internet.

Baden-Württemberg is a traditionally important "media" industry centre (publishing, audio-visual creation, etc.), that has encouraged the appearance of the "new media" industry (including electronic publishing, software, etc.) and the setting up of new (German) headquarters on the part of information technology firms such as IBM, HP and Alcatel.

In this context, the government took the initiative to start Baden-Württemberg medi@ in July 1996 as a means of immersing society in the information era. The programme brings together public and private sector projects. It focuses on six areas of interest and has assigned 500 million marks (over 42,000 million pesetas) for 89 projects varying from one to four years in duration. The six areas are as follows: **contents and applications reinforcement, development of the infrastructure network, the media in the business environment, modern media in promotion and education, local and regional system interfaces and the development of innovative technologies.**

Among the projects developed is the creation of on-line databases (company directories, official databases, etc.), advice centres, the promotion of cultural films, emptying of libraries onto the network and the promotion of cultural audio-visual creations. One of the projects, designed to create a multimedia companies directory, gathered 18,000 firms, over 800 of which are located in the territory of Baden-Württemberg.

The project is monitored by a public association, MFG Medien- und Filmgesellschaft Baden-Württemberg, which prepares an annual report assessing the 89 projects.

One of these projects is the "Film & Medien Zentrum" in the city of Ludwigsburg, very near Stuttgart. It involves the renovation of some old barracks located in the centre of the city in order to house new companies in the field of multimedia and audio-visual creation. The project is promoted by the local authority and the government of the "Land", or region. Although, as a result of its proximity to a cinema academy in the city itself, a close relationship between it and the Film & Medien Zentrum was encouraged,

this has not occurred in practice.

The buildings are public property. They take up a total area of 40,000 m<sup>2</sup>, of which 12,000 have already been restored and are operational. Whilst the property is public it is promoted by the private sector, which acts on the property transferred.

Companies set themselves up there for the services provided in the building and the prices charged for the spaces. The group of approximately 40 companies established there includes multimedia editors, advertising agencies, webpage and film designers, among others.

The fact that Baden-Württemberg is still one of Europe's main industrial regions has favoured the development of Information Technology and the new multimedia sector. Notwithstanding this, there are other equally important factors in play, such as the role of the university, which has also encouraged development by means of its good telecommunications infrastructure. Likewise, the public sector has invested heavily in multimedia projects, providing large amounts of capital (42,000 million pesetas) with the participation of various ministries as part of the same programme.

---

**Name:** Technopolis and Medipolis

**Location:** Oulu, Finland

**Initiative:** Collaboration between public and private sectors

---

## DESCRIPTION

The Nordic markets are the world's advanced in terms of information and communication, as indicated by the penetration of Internet, the number of mobile phones and the fibre optic network, the figures for which are the highest in the world. The presence of large transnational companies, particularly in the field of telecommunications (Nokia and Ericsson), have made the northern European markets highly dynamic.

Oulu is a small Finnish city located on the Bothnian Arch (uppermost limit of the land on the Baltic Sea in the Gulf of Bothnia). The Bothnian Arch is also an association that links the regions of Sweden and Finland bordering the Arch. With very their similar cultures and social structures, the association is intended to increase the competitiveness of the companies in the region and to guarantee sustainable growth.

Oulu Technopolis was the first scientific park in the Nordic countries. Located beside the University of Oulu and the laboratories of the Finnish Technical Research Centre, it now has an area of 60,000 m<sup>2</sup> and enough space to continue expanding. The total number of 100 companies established there employ approximately 2,400 people.

Most of the companies work in the fields of telecommunications, electronics, software, optoelectronic technology and industrial automation. The companies mainly focus on R&D, though a small section also deals with specialised manufacturing.

The park provides a high standard of supporting services for companies right from the initial operations. Oulu Technopolis runs according to a system designed to minimise the initial requirements needed to set up a company. For example, the smallest space rented out measures 15 m<sup>2</sup>, and the largest, 15,000 m<sup>2</sup>. Whilst a company is starting up, it is usually enough to rent an office in the central building of Technopolis. Apart from the desk and a telephone, the numerous companies in the park can supply the rest.

The park is run by the Technopolis Oulu Group, a private company which owns the land and the buildings. The park's smooth running and positive expectations paved the way for the building area to begin to extend which, once complete, will mean an increase of 67%.

Technopolis Oulu is also responsible for the Oulu Region Centre of Expertise, the aim of which is to promote economic activity by means of a series of innovative initiatives. The programme, which is to take place between 1999 and 2006, centres on telecommunications, electronics, software, medical technology and biotechnology. The programme will be developed alongside national programmes for promoting work on the network and national technology specialisation centres. The first part of the programme will span from 1999 to 2002. Estimates predict 22,000 high tech jobs in the area in 2006, 12,000 of which will be in telecommunications, 3,500 in medical technology and biotechnology, 3,500 in software and 3,000 in other specialities.

Sharing the same structure as Technopolis Oulu as well as certain activities in common, Medipolis emerged with a commitment to specialisation. Medipolis is a community that focuses on health science-related research development and production. It was set up in 1990 as a private foundation. Its present associates are the University of Oulu, the hospital and various local, national and foreign research centres. The hospital and its research centre employ 5,000 professionals and 50

companies occupy 500 more jobs. It specialises in biotechnology, pharmaceutical production processes and telecommunications and electronics applications for health-related products.

Medipolis seeks members to market innovation for global markets and R&D. The organisation provides amenities for the creation of companies related to the areas of specialisation of the park. Access amenities are provided for laboratories as well as other equipment and economic support for R&D.

---

**Name:** Environment Park

**Location:** Turin, Italy

**Initiative:** Mixed

---

## DESCRIPTION

The idea of creating a scientific park was put forward in 1993, when a number of research and high technology-based companies expressed their mutual desire to set up near the city's universities. The municipal authorities approved the construction of the park, and it opened in 1997. The main promoters were the Piamonte, the Regional Development Agency, the Turin City Council, the University of Turin and the Turin Polytechnic.

Collaboration between the different institutions was possible thanks to the approval of a series of basic principles concerning interdisciplinary co-operation, the financial support of all of the parties responsible for local and regional development and Turin Polytechnic and University's declared interest in participating in the park.

The "Spina 3" area, a deteriorated old industrial zone, was chosen as its site, thus providing the City Council with a specific interest in the project. The Council provided resources and the area was restored, providing the grounding for the integration of environmental measures for production, processes, design and impact.

The park was planned to incorporate all the infrastructures necessary to create an appropriate atmosphere for work and research:

- Training
- Advice and consulting services for companies
- Financing systems
- Co-operation and exchange of experiences
- Incubators
- Forming part of an international network

Besides the promoters mentioned above (with the exception of the universities), the Environment Park society also includes various employer associations. 70% of the construction costs were covered by the European Union by means of the structural fund.

The park provides all kinds of amenities and services for setting up businesses. The land prices are competitive and there is a wide range of property possibilities (sales, rental, leasing, etc.). The services included in the park range from editing and copying to the organisation of conferences and marketing and financial services. Access to university installations is promoted or largely facilitated, as the two universities were promoters and are the park's main defenders. Moreover, they both have various research centres close to the Environment Park which are effectively making it an extension of the university campus. The atmosphere created for the interaction of all of the parties provides opportunities for the exchange of ideas, joint projects, etc. The park provides economic support for small businesses via the Regional Development Agency, which has led to the increasing presence of private investors providing both capital and advice for start-up businesses.

The park has an area of up to 6,500 m<sup>2</sup> of offices, ranging from standard spaces measuring 100 m<sup>2</sup> to spaces which have been adapted for individual requirements. The total laboratory area is 15,000 m<sup>2</sup>, in standard 400 m<sup>2</sup> modules and personalised solutions. The universities have 2,000 m<sup>2</sup> of laboratories.

The architectural structure of the park is open-plan, comprising a large green area in the centre of Turin. All of the buildings have been built by means of environment-

friendly techniques, using natural materials. The entire park is fibre optic-cabled. There is a LAN connected to all of the buildings, which can also be used for video-conferencing. A 2 Mb/s Internet connection guarantees high-speed data transmission. The Services Centre houses conference and videoconference halls, lecture and classrooms, a library, a reprographic service, cafeteria and restaurant. The park is linked to the airport and city centre by road. Turin's new train station guarantees high-speed international rail connections.

---

**Name:** Hoxton

**Location:** London, United Kingdom

**Initiative:** Private

---

## DESCRIPTION

As in most European capitals, a community of multimedia-based designers has developed spontaneously in the centre of London, around Hoxton Square, near the neighbourhoods of Finsbury, Old Street and the financial district of the City.

It is a further example of the relationship between the new sector and centrality. The city of London combines a series of characteristics (some of which it shares with New York) which have provoked the emergence of the sector:

- The fact that, alongside Tokyo and New York, it is one of the world's top three financial capitals. This lends the market dynamism as company decisions are made nearby. Physical proximity is an important factor that the web alone cannot substitute in terms of formal and informal contacts with people who make decisions. Thus, New York is playing with an advantage as it has managed to move the entire high technology market to NASDAQ, which functions as the heart of the system, thereby providing it with far more dynamism. Nevertheless, proximity to this market is also the factor behind another special characteristic: the presence of large amounts of available capital. Profits made by financial markets, with their associated elusive or intangible nature, are always available in the form of risk capital for entrepreneurs with ideas.
- The English cultural tradition, in combination with its enterprising spirit, which is very different to that of America. This tradition, which could be described as a drive or need to be at the forefront, innovate and create, is also an important factor.
- The final factor is that of Great Britain's audio-visual tradition, particularly that of London. The need to move to the new media is all the more urgent for the traditional audio-visual firms. Moreover, given London's professional training tradition, it has only had to adapt training to new technologies, incorporating them into the training programmes.

Carreras House is located in the middle of the area. The building dates back to the beginning of the century and has been completely overhauled, adding the infrastructures required to turn it into London's "new media" symbol. What is more, it is the first information technology centre directly linked to the emblematic Silicon Alley building: 55 Broad Street. The connection has a broad bandwidth, in order to facilitate communications between the two buildings.

The philosophy followed is the same as that of America's "Plug 'n' go": everything is ready for you to arrive and make a connection with enough bandwidth to be able to work and navigate without any difficulties.

Thus, a network of buildings is beginning to form around the world that share characteristics and undertake the same kind of activities.

---

**Name:** Silicon Fen

**Location:** Cambridge, United Kingdom

**Initiative:** Mixed. University highly important

---

## DESCRIPTION

Whereas in other countries (in Europe - the Nordic countries) the growth of ICT sector is closely connected to the high level of development in the market and the information economy, in Cambridge the driving force behind what has become known as Silicon Fen is the concentration of know-how (via the University of Cambridge) and the existence of successive local planning operations. The third appendix contains a detailed description of the so-called "Cambridge Phenomenon".

The origin of the last phase of development was a series of recommendations from a parliamentary subcommittee in 1967. The first wave of economic growth spurred by newly created firms related to new technologies reached its peak in the mid 80's (the "Cambridge Phenomenon" report was published in 1985). At the end of the decade however, the economic recession was making itself felt.

The second technological wave began two years ago and is much more closely related to information communications technology, the advantage being that many of the infrastructures are now complete. The Science Parks, for example: Trinity College, of Cambridge University, opened "Cambridge Science Park" in 1970 on the land of an old military airport. 29 years on, the park houses 75 companies in the most advanced sectors of biotechnology and ICT, providing employment for 4,350 people. Facing it on the other side of the road is St. John's Innovation Centre, belonging to St. John's College, also part of Cambridge University. The latter focuses more on creating new companies and includes spaces and accommodation facilities for companies.

An approximate total of 2,000 high tech firms are located around the outskirts of Cambridge and within its various Science Parks.

The university runs a very fruitful integration policy for companies. At present, firms may contract or request research, or rent laboratories: the company personnel share the installations with the university staff, thus favouring the exchange of ideas. University offices such as the "Cambridge University Technical Services Ltd" (CUTS) and the "Industrial Liaison Office" (see appendix) also work in collaboration with companies.

Silicon Fen is one of the most successful experiences in gathering the technological industry around the university. Without the university there would be no Silicon Fen. Cambridge University is the country's intellectual and scientific centre, but it was not until the decision was taken to change the relationship between the university and businesses that the area began to be developed. We can therefore now attribute much of its success to this relationship that, without forgetting the university's educational and independent role, accepts the generous private funding in exchange for research to order and the rental of laboratories. There are various departments within the university which deal with this relationship.

The application of successive development projects also demonstrates their limitations. The first report drawn up (in 1950, see appendix), the aims of which were enviable and very well intentioned, only served to postpone the birth of Silicon Fen. The second, a reaction to the first, rectified the errors and put forward a different model which was far more compatible with the activity to occur later.

The first phase of growth ended, however, and not very satisfactorily. The companies did not possess enough experience to turn the products created into world-wide sales



successes. The Acorn case is paradigmatic. After dominating the English market, it began a downward slide from which it could not recover, in spite of possessing an operating system which was more powerful than Microsoft's DOS. This caused them to rethink their business model for a second chance: whilst continuing to focus on R&D, they must not neglect the production, marketing or distribution of their products.

The absence of large multinationals is still one of the area's weaknesses. Although some large multinationals have set up there, local companies have yet to become multinational (billion \$ companies). The first attempt with Ionica has not had very positive results. The problems appear to stem as much from the technical side of things as from management.

The presence of people who are strongly linked and dedicated to the project is also an important factor for success. The example of Herman Hauser, who started as an entrepreneur and later injected dynamism into the project, is significant. Nothing happens in Cambridge without H. Hauser knowing about it. His latest initiatives are the Cambridge Network and a private school for entrepreneurs; a clear commitment to the future of Silicon Fen.

The potential importance of the area for the English economy has not caused it to be given any special treatment by the central government. Many analysts suggest this to be another of the reasons for its merely relative success so far. Things may change following the latest "white paper" presented by the resigned minister of Trade and Industry, Peter Mandelson on competitiveness (Our Competitive Future. Building the Knowledge Driven Economy).

Lastly, the importance of the environment and the standard of living in the area should be stressed, seen as an inconvenience by locals and employees alike, particularly in recent years as a result of the expansion. These factors, together with access to capital and good business managers, are the main challenges presently facing Silicon Fen.

---

**Name:** Silicon Glen

**Location:** Glasgow-Edinburgh, Scotland, United Kingdom

**Initiative:** Private with public backing

---

## DESCRIPTION

Scotland is one of Europe's main hardware, microelectronics and software producers. The 100-mile passage between Glasgow and Edinburgh is the operations base of five of the biggest computer producers and of the world's leaders in semiconductors.

There are nearly 600 different locations within Silicon Glen, housing the electronics and telecommunications research, design and manufacturing installations of companies from around the world. They produce 7% of the brand computers, over 37% within Europe, 50% of ATM and 60% of its workstations.

Thus, part of Scotland's economy revolves around the "corridor" linking the two cities. It is a distribution nexus that connects the passageway with the European market, providing cheap, high-speed transport. The availability of conveniently trained professionals from Scotland's 13 universities and technical colleges, numbering 4,500 graduates per year in electronics-related specialities and 8,600 in technical and scientific subjects. It has 12 universities, which provide courses on semiconductors.

The governmental agency "Locate in Scotland" (LIS), which promotes the corridor, was created in order to take advantage of and maintain this inertia.

The approach taken to the passageway is totally different to most of the examples seen above, which are located in urban environments. Silicon Glen is more focused on high tech industrial manufacturing and receives special treatment because it is responsible for 24% of Scotland's GDP. The need to give land prices priority over the environment, due to the need for space for the production plants, has created a typical industrial landscape.

Scotland has sought to specialise even further in its hardware production: on semiconductors. A new initiative, the Alba Centre Campus, has therefore been launched, and is still in the process of being built.

The Alba Centre Campus is an area of 40 hectares located in Livingston, halfway between Glasgow and Edinburgh, at the heart of Silicon Glen. The aim of the Alba Centre is to turn Silicon Glen into the world's semiconductor capital. The centre is to house a "Design Complex" based on the System Level Integration (SLI) and an institute based solely on that technology. This research centre is the fruit of collaboration between 4 Scottish universities.

The campus has been designed according to the highest environmental and architectural standards and will be linked by means of a sophisticated broad bandwidth network, a potent intranet and videoconferencing system.

---

**Name:** ELECTRUM, Kista Science Park

**Location:** Stockholm, Sweden

**Initiative:** Mixed

---

## DESCRIPTION

The Swedish information and communications technology panorama is clearly marked by the dynamism of its internal market. The fourth appendix sums up the situation of this market.

Kista is the most successful example included within the network of 24 "Science Parks". Kista is a suburb situated in the Northeast of Stockholm. In 1979, ERICSSON and IBM established research centres on a piece of land belonging to the Swedish army. The park was officially opened in 1988 and has grown steadily ever since. The park presently takes up an area of 200 hectares, possesses virtually unlimited possibilities for extension and houses a total of 350 companies employing 23,000 people.

Situated in the centre of the park is Electrum, a complex that deals with extensive ICT education programs taught by the Royal Institute of Technology and the University of Stockholm. It has approximately 30 teachers in total, 500 researchers and 3,000 students. Electrum also houses other research and development centres, such as the Swedish Institute of Computer Science (SICS), the Swedish Institute for System Development (SISU), the Industrial Microelectronic Centre (IMC) and the Technical Information Standardisation Authority (ITS). The Royal Institute of Technology accounts for a third of Sweden's engineers and as a result of its reputation Stanford University runs telecommunications there by means of a high-speed link between the two centres.

The main research sector focuses on ICTs, although biotechnology is also dealt with. This is not surprising considering that the region of Stockholm produces 75% of Sweden's turnover. ERICSSON is still the heart and soul of the park, with numerous research centres in the area as well as production installations (the only ones in the park), although not for standard production.

The park houses an office dedicated to financing potential businesses. The money is provided by banks, the private sector and the public administration. Investments may include up to 50% contributions and range from 500,000 to 3,000,000 Swiss crowns. The success or failure of the business conditions the returning of loans. The money cannot be designated to existing companies, even in the case of new products.

One of the aspects with room for improving in Kista is that of housing. At present, most of the people working in Kista do not live there and vice versa, many people live in Kista but do not work there. Transport from the centre of Stockholm via subway takes 40 minutes.

Whilst Kista Science Park fits into the technological park model of the 80's, the inertia of the telecommunications sector is causing the ELECTRUM centre to be built as a concentration of knowledge capable of continuing to research and develop new products. The new sector ("New Media") is developing in the centre of Stockholm (see appendix) along similar guidelines to those we have seen in other cities.

---

**Name:** SoftCenter

**Location:** Ronneby, Sweden

**Initiative:** Public

---

## DESCRIPTION

Ronneby is located in the southeast of Sweden and has a population of 30,000. The creation of Softcenter is the result of an initiative in 1986 of the mayor of Ronneby at the time and the general manager of Tarkett, a Swedish company specialising in parquet and other kinds of flooring. Based on the idea of the “four Ks” (culture, knowledge, competence and communication in Swedish), the Softcenter was designed as an answer to the major crisis of traditional industry. Work began on the first of a series of buildings, now numbering eight.

The buildings were built and owned by the city council, which rents them out to businesses. The spaces available range from 30 m<sup>2</sup> to over 1,000 m<sup>2</sup>, and the services provided include rapid Internet connections. There are already over 80 businesses there, ranging from large companies (ERICSSON, GlobalOne, SEMA) to small consultancy services, advertising agencies and Internet firms. The companies set themselves up there partly because of the infrastructures available and partly for the presence of other companies, which results in an atmosphere which the companies value positively. SIEMENS, which has branches all around the world, considered setting up at Ronneby for this reason.

Following the success of the centre, the University of Karlskrona/Ronneby (Kalskrona is approximately 35 km south of Ronneby) was set up in 1989. The university already has 3,000 students, 8 departments, technical schools and research departments. The departments at Ronneby (with half of the total number of students) are located within the Softcenter. On the Kalskrona campus the speciality is telecommunications and at Ronneby it is software. The study programme, however, rather than focusing solely on technical disciplines, also integrates ICTs into other disciplines such as business management, humanities and labour relations. Softstart functions as an incubator, providing assistance and amenities during the first years to those who decide to create their own companies. The Industrial Liaison Office provides assistance for small and medium-sized companies and University departments by supplying lecturers and research personnel for industry, arranging contacts among students and joint university-business projects, as well as organising seminars and courses on trade and industry-based matters.

Softcenter's collaboration has enabled the local government to use ICTs at all levels. The municipal authority in 1993 decided to provide support for ICTs in Ronneby and initiated a 10-year project called Agenda 2003. The effects of the programme are already visible: libraries and schools are being computerised, a 20 km fibre optic network – the Ronneby Resource Net – with ATM technology linking the SoftCenter, City Council, library and schools. The final aim of the Agenda is extend the network to all citizens, starting with the libraries and colleges, followed by culture, other public sectors, trade, industry and individuals.

The recent creation of SoftCenter International is intended to extend the project around the world. So far, six centres have opened in Sweden and a seventh in Duluth, Minnesota is about to open. The aim of the partnership is to develop a network in which a series of services are centralised: information on ICTs, the creation of an administration council for all of the centres, the creation of a common homepage, preparation of annual plans and other activities such as marketing and project development.

#### **4.3 Environmental and urban structural requirements for the new activities**

A series of conditions that must be met (factors evident in the previous examples either as a result of their presence or lack of) in the process of developing the new sectors can be derived from the 21 cases studied. Our aim is by no means to systemise the process; rather, we are concerned with minimum requirements.

Likewise, it is necessary to point out that there are two sectors with rather different needs. On the one hand there is the ICT sector and its research and development and production aspects (we could also make a distinction between hardware and software, the needs of which also differ). On the other hand there is the “new media” sector, which is more closely related to the world of Internet and the multimedia industry.

*The former sector* continues to develop mainly in the large industry parks, many of which were designed in the 80's and which have gradually adapted to new technology. The case of Cambridge is an exception, whose existence is based on the concentration of know-how rather than space or competitive labour prices. The companies that set themselves up at the Science Park or some other location in Cambridge give priority to the price and availability of space. The Hsinchu Science-Based Industrial Park is the clearest example of this model, based initially on Silicon Valley, which has evolved whilst attempting to deal with its weaknesses (differentiation between leisure, living and production spaces), advanced infrastructures and environmental protection. An analogy is that of a large factory in which aspects such as environmental quality and even standard of living are seen as necessary requirements.

The creation of the Asian parks is a gigantic labour intended to serve the technology of the 21<sup>st</sup> century. Nevertheless, it has its risks. The gigantic proportions of the Korean and Malaysian projects, besides conditioning their profitability, reduce room for manoeuvre. The trends which are beginning to emerge suggest the vital importance of flexibility; the proportions of these projects make them look like monsters. It is nonetheless true that Asia has become the great information technology-producing centre of the world, providing them much of their spectacular growth prior to the financial crisis of 1997-98.

Other trends related to the adaptation of these parks is that of their location areas specialising in training, research and business-producing sites. Kista Science Park was located in the middle of ELECTRUM, and Cambridge located its living space in St John's College's new park, with all of the services required to supply new businesses. The project has demonstrated that know-how and the use made of it at any given moment is the truly differentiating factor which must be encouraged.

There are a series of conditions met by ICTs, however, which are shared by both sectors. The **standard of living** is a factor that is becoming increasingly important to take into account. New technology-related workers demand a certain standard of living, which encourages them to join the new complexes.

The **location in relation to surrounding services** is one of the most important factors. In the case of the large, mainly production-centred parks, relative location is measured in global terms. In Asia, the location factor is related to labour price. In India, the location factor is also related to training, particularly software-related. The Software Technology Parks need only guarantee the supply of water, electricity and quality infrastructures in order to send products out from India via satellite or cable. Indian professionals set up there and do the rest.

**Infrastructure** is a decisive factor there; telecommunications are vital as they are the foundation for production in the new sector, whilst communications and, in the most modern cases, hot/cold water systems, refrigeration/heating installations and transport. Poor transport infrastructures collapse cities such as Cambridge and Bangalore on a daily basis.

The “*new media*” possess certain well-defined characteristics with regard to environmental requirements. First of all, an **urban setting** develops spontaneously. This occurs both as a result of the kind of people working there and due to the necessary proximity to decision-taking centres. Whilst the case of Silicon Alley in New York is paradigmatic, there are other examples to be found among the cases we have studied (Ludwigsburg, in Germany, London and others). In fact,

In fact, two trends could be established, depending on the location. Firstly, those which developed in important centres of the world economy. New York, London and doubtless all the major capitals will have developed this sector simply as a result of their centrality. Alternatively, there are initiatives that are developed in small cities. In this case, activity is stimulated and the project develops its own dynamics. Thus, the development of the two cases evolves differently.

The need for **infrastructure** is particularly clear in the case of the “new media”. A good telecommunications network and good access, particularly via public transport, are vital.

All this to improve a high **standard of living**. In the case of urban centres, the standard of living is even more important; Professionals tend to be more demanding in terms of standard of living. In New York it is considered a critical factor, alongside price and the availability of space.

Finally, the **flexibility of space** (with the availability of various options for proportions, functions and ownership) is one of the most distinctive characteristics of the new production centres.

The possibility of moulding the new economy to the urban environment, which has already been established, is felt to be the richest possibility, given the information gathered with respect to urban planning history and production. This point could be the greatest weakness of the Asian megacities created artificially out of the void. This model contrasts with the organic development of the sector alongside the city, taking advantage of the urban development whilst adapting it to the new activity.